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The purpose of this study was to assess the readiness of combat medics in performing core life-saving skills, to examine an alternative method for Advance Individual Training (AIT) of combat medic students, and to determine the effect a self-directed multimedia sustainment training package has on combat medic readiness. Retrospective element of the design measured the proficiency of 284 combat medics with 1-4 years of experience at four installations. The prospective element of the design measured the proficiency of 127 newly graduated combat medics from the 91B10 course, comparing graduates receiving traditional course with graduates receiving the experimental course. After a baseline measurement of skill performance and cognitive knowledge was taken, an experimental sustainment training package was initiated at one installation to compare performance of medics using an experiment sustainment package with the usual sustainment training at the remaining three installations. Subsequent measures were taken to determine if skill proficiency degraded, remained the same, or improved. Conclusions: 1) experimental course significantly improved combat medic readiness, 2) experimental course graduates gained equivalent of one year's proficiency over the experienced medics, 3) experimental sustainment training package improved combat medic readiness.

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MEDIC Training 2000

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We owe a great debt to all our data collectors, Corps Surgeons, and their NCO coordinators. Without their support and cooperation, this study would have failed. The coordination effort between the four sites and the research team took many man-hours and we appreciate their efforts. The efforts at our experimental site, Fort Hood, Texas, were remarkable.

We would like to thank the Command and staff of the 232nd Medical Battalion for support and patience. Their openness to allow exploration of a different training model was greatly appreciated. We appreciate all the work and effort that goes into training a combat medic.

We would like to extend a special thanks to MAJ(P) Debra Marks, AN, for her outside critique of this report. Her comments and suggestions were very insightful and greatly appreciated.

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EXECUTIVE SUMMARY

Background

Combat medics are expected to render first responder aid during battle. In many cases, their skill is the difference between life or death. Their life-saving skills are based on complex, hierarchically organized, cognitive and psychomotor sets. Such skills are quickly lost if they are not learned well and repeatedly practiced. Initial training of combat medics must provide a knowledge and skill base sufficient to prepare them for immediate assignment as front-line medics, as well as for on-the-job training. Sustainment training of combat medics is critical, because the life-saving skills that form the core of what the combat medic must do in battle are not routinely used by medics in garrison. However, unit training time is limited and must be used efficiently and effectively. Commanders must give priority to the training of skills for which they are held accountable.

These facts create a unique set of problems for the Army Medical Department. For over 20 years, supervisors and commanders have expressed doubt about the effectiveness of *initial* and *sustainment training* of *91B10* combat *medics. The proficiency of 91B10* combat medics has been tested many times (Blythe, et al., 1979; Latman and Wooley, 1980; Richardson, 1989; Skelton and McSwain, 1977; Training Evaluation Division, 1981; Zadinsky, 1997; Zautche, Lee, and Ethington, 1987). The results of these studies have consistently indicated that initial training of combat medics does not produce a combat medic proficient in core life-saving skills, that on-the-job training does not provide practice in core life-saving skills, that sustainment programs are not focused on life-saving skills, and that unit training lacks command support. The current study was designed to comprehensively evaluate all elements define 91B10 proficiency training and provide senior leadership with information needed to improve 91B10 training.

Design

Data were collected from large samples of military personnel who were systematically chosen to represent the Army's front-line medics, their trainers, and their supervisors. Information was collected from multiple perspectives and on more than one occasion to insure that it was reliable and convergent. Both subjective and objective data were collected from a variety of sources: demographics, self-evaluations, peer-evaluations, student evaluations, instructor evaluations, supervisor evaluations, opinion surveys, fact-finding surveys, standardized observations, aptitude tests, motivation tests, school grades, nationally standardized proficiency tests, locally developed proficiency tests, written proficiency tests, and hands-on proficiency tests. Testing was conducted using supplies, equipment, methods, and standards that were relevant to military operations and nationally recognized guidelines for emergency medical technician training.

Procedure

Phase I was an assessment of the current combat medic proficiency in the field. Baseline readiness was obtained from testing of Combat medics from light infantry (Fort Lewis), mechanized infantry (Fort Carson), armor (Fort Hood), and airborne (Fort Bragg) installations were tested using both written and hands-on tests of life-saving skills. All medics tested in Phase I (n=347) were 91B10 skill level medics in pay grades E2 to E4. In addition, supervisors of 91B10 combat medics (n=255) were surveyed about the training and proficiency of their subordinates.

Phase II was an evaluation of Advanced Individual (AIT) combat medics. Students at Fort Sam Houston (127) were randomly selected for training in either a traditional or an experimental 91B10 course. Both courses were 10 weeks in duration and covered the same content. They differed in the teaching strategies used to present the material. The experimental course emphasized adult learning principles, integrated classroom exercises and practical exercises.

Following Phases I and II of the study, combat medics at Fort Hood began using a new sustainment-training package.

Phase III was an assessment of sustainment training. Following Phases I and II of the study, Fort Hood began using a new sustainment-training program emphasizing core life-saving skills and hands-on proficiency. The other three installations continued to use traditional sustainment-training programs. Phase III testing was a re-evaluation of the three groups: (1) experienced combat medics who had been tested in Phase I (n=284 due to attrition), (2) new combat medics who had graduated from the traditional 91B10 course in Phase II (n=61), and (3) new combat medics who had graduated from the experimental 91B10 course in Phase II (n=66). For all three groups, Phase III testing took place six months after baseline testing. Three months later, both groups of new combat medics were tested again, nine months after their baseline testing. Phase III testing was identical to baseline testing, identical for all three groups, and identical at all four installations (Forts Bragg, Carson, Hood, and Lewis).

The final phase of the study, Phase IV, was a feasibility test of a method for measuring the effectiveness of unit training programs. A sample of 91B10 trainers were asked to use a standardized form to compute an individual and a unit Medical Field Readiness Index using individual proficiency test scores from hands-on tests of life-saving skills.

Recommendations

1. The adult learning model should be fully implemented in the 91B10 course.

Two elements of the results led to Recommendation 1. First, data from the after action report of the Phase II training officer, the staff observations of classroom and laboratory presentations, the instructor evaluations of the course, and the student evaluations of the course all indicated that there were key differences between the traditional and experimental 91B10 courses. Second, data from written and hands-on tests of medics in Phase III demonstrated that new medics who graduated from the experimental 91B10 course were significantly more proficient at core life-saving skills than those who graduated from the traditional 91B10 course.

Additionally, new medics graduating from the experimental 91B10 course were more proficient than combat medics with substantially more experience. These two findings suggested that the experimental 91B10 course was more effective than the traditional 91B10 course and serves as a model for future 91B10 courses.

2. Instructors of 91B10 combat medics should have intensive training in teaching strategies that facilitate adult learning in both the classroom and laboratory.

Three elements of the results led to Recommendation 2. First, data from the staff observations of faculty presentations indicated that the adult learning model was more effectively implemented in the laboratory than in the classroom. Second, data from motivation tests indicated that both self-directed learning and school motivation significantly declined during Phase II for students in both the traditional and the experimental 91B10 courses. Third, neither self-directed learning nor school motivation predicted performance in either the traditional or the experimental 91B10 course. These data suggest the adult learning model was not fully implemented in the experimental 91B10 course. Results suggest faculty needed more training in how to incorporate the adult learning model into classroom teaching practices.

3. The standard for graduation from the 91B10 course should be hands-on proficiency with life-saving skills.

Two elements of the results led to Recommendation 3. First, the results of hands-on tests of core life-saving skills administered six months after baseline testing showed new combat medics trained in an experimental 91B10 course were not only more proficient than new combat medics trained in a traditional 91B10 course, but were also more proficient than experienced combat medics. Second, the results of hands-on tests of core life-saving skills administered nine months after baseline testing showed new combat medics who were trained in the experimental 91B10 course continued to be more proficient than new combat medics trained in the traditional 91B10 course.

Performance on the hands-on test of "assessing the casualty" was a good example of the results that led to Recommendation 3. Only 46% of experienced combat and 38% of new combat medics who were trained in the traditional 91B10 coursemedics (scored 70% or more) passed the test. In contrast, 65% of new combat

medics who were trained in the experimental 91B10 course passed the test. Because the majority of new combat medics from the traditional 91B10 training failed the proficiency test, it was clear that the standard used in initial 91B10 training was too low to produce a fully proficient combat medic. Because experienced combat medics performed only slightly better than traditionally trained new combat medics, it was clear that unit training was not able to produce a fully proficient combat medic. That is, either initial 91B10 training did not provide experienced combat medics with the background needed to make good use of unit training or units could not provide sufficient training to bring life-saving skills up to standard. In either case, the need for higher standards in initial 91B10 training standards was apparent.

The performance of new combat medics who had been trained in the experimental 91B10 course was significantly better than that of their colleagues. Clearly, the experimental model's emphasis on hands-on proficiency throughout the training produced graduates who were more proficient – graduates who just a few months after graduation performed as though they had years of experience.

The results of proficiency testing nine months after baseline testing showed that both groups of new combat medics improved between the six month and nine month follow-up tests. However, new combat medics who had been trained in the experimental 91B10 course were still performing at significantly higher levels than those who had been trained in the traditional 91B10 course. That is, both groups of medics were able to improve their performance with sustainment training, but those who had been trained in the traditional manner were not able to reach the same levels as those who had been trained with an emphasis on hands-on proficiency. These data showed the long-term value of having a good start.

In summary, these results suggest the performance standards of the experimental 91B10 course were more effective than the traditional 91B10 course in producing proficient combat medics and the experimental course standards should become the model for future 91B10 courses.

4. Installations should be given a standardized sustainment-training program focused on core life-saving skills.

Between Phases I and II a new sustainment-training program was instituted at Fort Hood. The program focused on four core life-saving skills and emphasized hands-on proficiency.

The results of proficiency testing demonstrated the effectiveness of having the program in place. Two elements of the results led to Recommendation 4: 1) Experienced medics showed improved proficiency from baseline testing to six-month testing on all four skills only at Fort Hood (the site of the on-post sustainment package); 2) New combat medics, only at Fort Hood, demonstrated consistent improved proficiency on all four skills from six-month testing to nine-month testing .

5. A Medical Field Readiness Index that holds commanders accountable for maintaining 91B10 combat medic proficiency should be implemented Army-wide.

Four elements of the results led to Recommendation 5. First, feedback from supervisors of combat medics, experienced combat medics, and new combat medics all agreed that combat medics did not routinely practice life-saving skills in the normal course of their day-to-day activities on the job. Thus, sustainment training was necessary. Second, they all agreed that training sessions dedicated to teaching life-saving skills were given regularly. Weekly or monthly training on these topics was the norm. Third, they all agreed that training resources (mannequins, videotapes, field exercises, etc.) were available and were used regularly to teach life-saving skills. Fourth, supervisors of combat medics indicated that their only major training barrier was a lack of command support.

Supervisors suggested that commanders needed to be accountable for medical readiness, just as they are accountable for the physical fitness of their soldiers. This study demonstrated clearly that it was feasible to conduct large-scale proficiency testing of medics. As a result a standardized method for computing a Medical Field Readiness Index was developed. This system for assessing and recording individual and unit medical readiness should be implemented Army-wide.

Conclusions

The experimental 91B10 course produced new combat medics who performed four core life-saving skills significantly better than their peers. The experimental course produced new combat medics performing at higher standards of proficiency than medics with one year's experience.

A standardized sustainment-training package, focussing on core life-savingkills, improves readiness.

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INTRODUCTION

BACKGROUND AND SIGNIFICANCE

System-wide changes in the Army Medical Department (AMEDD) and the Department of Defense (DoD) require efficient and effective utilization of human resources. Reductions in Army personnel intensify the need for qualified active duty personnel and require that those combat medics remaining on active duty possess and maintain current medic skills associated with casualty care management. However, the skill and knowledge level of experienced combat medics is literally unknown. This is unfortunate because it is the combat medic that must maintain competency in order to render first responder aid during battle; their primary goal is that of saving the lives of American soldiers (Bartz, 1995). But recent peacetime events have placed combat medics in an obscure role with utilization problems (Bartz, 1995; DeLorenzo, 1997a).

During times of war, as in Desert Storm/Shield, combat medics provide first responder care far forward and provide care for patients in battalion aid stations, medical clearing companies, combat support hospitals, and fixed hospitals (Butler, Hagman, and Butler, 1996; De Lorenzo, 1997a). During times of peace, medics are faced with a variety of jobs depending on their assignment. The performance of these jobs may be far removed from first responder care. Since combat medics rarely perform combat medic skills once combat medic schooling is completed (Bartz, 1995), it is essential that their competence for war and Operations Other Than War (OOTW) be maintained and evaluated. But, in order to provide a strong knowledge and skill base and one that will last a career, the initial training of the combat medic must be sound.

Advanced Individual Training (AIT) must be current. Presently, combat medic training is required to prepare combat medics to meet not only the traditional challenges of war, but also the new challenges of OOTW. The additional missions include disaster preparedness, humanitarian relief, disease prevention, vector control, mental health care, and protection of refugee populations. (Baker, 1996, De Lorenzo, 1997a; 1997b). Therefore, if the combat medic is to develop and maintain competency, directors of training programs have no choice but to continually revise and evaluate their curriculum in order to meet the demands of the new environments in which combat medics will be asked to perform. These directors certainly have the initial responsibility to ensure sound learning, but for the rest of the medic's career, competency will be the responsibility of the individual medic and his/her unit.

Readiness is the primary reason for maintaining an armed force. Sustainment training is critical for the combat medic to retain casualty care skills associated with the first responder role and combat skills that are required for survival on the battlefield. If the combat medic does not practice these skills routinely, skill proficiency will be lost (Blythe, Dembeck, & Murphy, 1979). If a combat medic is no longer competent at life-saving skills, valuable pre-hospital time may be wasted and the "golden hour" missed.

Incompetence in performing medic skills increases the risk to patients for dying and for related complications. In addition, the combat medic is not practicing to a minimum standard of care.

Regardless of the assignment given to the combat medic, reinforcement of these skills is necessary (Bartz, 1995; De Lorenzo, 1997a). Richardson (1997) suggests that sustainment training is inconsistent and infrequent. In addition, the literature is devoid of studies examining combat medic sustainment training in the Army. Therefore, an Army-wide standardized sustainment training program must be developed, pilot-tested, and then integrated into active duty unit training to sustain individual and unit readiness. Furthermore, the process should not be allowed to stop with the training program's integration; it requires an evaluation phase.

Unit leaders in Health Services Support Levels I, II, III, and IV do not have a reliable indicator to determine the clinical skills proficiency of combat medics. The absence of a unit readiness indicator for medics has placed medic training at the bottom of unit priorities. Time spent in the motorpool often exceeds time spent training on life-saving skills (Bartz, 1995). Therefore, unit readiness, which is dependent upon individual combat medic readiness, needs to be evaluated with a standardized and reliable metric. A reliable metric of individual readiness aggregated to the unit is critical to measure the ability of the combat medic to proficiently perform the readiness mission. With the rapid tempo and dispersion predicted in Force XXI redesigned units, the combat medic must be capable of performing skills with the underlying knowledge needed to triage, stabilize, and transport the sick and injured safely and reliably without significant supervision from doctors, physician assistants, and nurses.

Recent fiscal and human resource reductions in the AMEDD require continued improvements in efficiency and effectiveness: work smarter, not harder. In order to make substantive changes that improve the utilization, training, and sustainment of the competencies of the combat medic, it is necessary to determine skill level, implement and evaluate current and new training programs, and develop an indicator of competency.

Military medic trainers are challenged today to do more with less. Even with financial, time, and human resources in short supply, the expectation for producing quality combat medics is still a reality. In addition, military trainers are faced with organizing an exponential explosion of information of facts, findings, perspectives, and skills that medic soldiers need to function competently and effectively in today's Army.

PURPOSE

The purpose of this education/training study is five-fold. Its intent is to: (1) evaluate the skill performance and knowledge of the experienced combat medics; (2) evaluate new combat medics' proficiency in life-saving skills upon graduation and six months later; (3) develop an experimental training model for the combat medic course; (4) develop and test a sustainment package; and (5) develop and test a Medical Field

Readiness Index (MFRI) in order to produce an indicator of combat medic skill performance. The results of this study will provide the AMEDD with information that will allow for evidence-based decisions about resource allocation for the combat medic course and the unit sustainment-training package for the combat medic.

REVIEW OF THE LITERATURE

Manual methods and computerized searches of Medline and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases from 1961 to 1999, were completed in order to examine the previous and current research on combat medic competencies. The literature review is presented here, organized by variable of interest in the following order: combat medic, sustainment training, and achievement motivation.

Combat Medics (91B10)

Recently, the competence of combat medics as first responders has fallen under criticism. The criticism includes: inability to support a variety of missions, poorly prepared to care for combat casualties, lack of relevant training, poor sustainment training, and preoccupation with beneficiary care at the expense of casualty care (Hayunga, Donaldson, Sniffen, & Holsinger, 1988; Jagoda, Pietrzak, Hazen, & Voyer, 1992; Bartz, 1995; Cloonan, 1995; De Lorenzo, 1997a, 1997b; Richardson, 1997).

During war, casualty care is critical because 90% of combat deaths occur on the battlefield before the casualty reaches a medical treatment facility (MTF) (Butler, Hagmann, & Butler, 1996). The longer the casualty remains on the battlefield the greater the probability of death (Bellamy, 1984). Because of their predominance in far-forward units, combat medics will play a large role in early care of the casualty (De Lorenzo, 1997a, 1997b). Since most wounds are penetrating, the greatest threat to life is hemorrhage (Bellamy 1984 & Baker, 1996). And although air superiority may be assured, advancing elements of a ground thrust may exceed the range of helicopter evacuation. The casualty will remain on the battlefield longer, making forward resuscitation by the combat medics a critical element in survival of the soldier (Bellamy, 1984). In this scenario, the combat medic must be competent in casualty care skills in order to minimize mortality and sustain the fighting force.

Combat medics have a variety of missions because this (Military Occupational Specialty (MOS) is the entry level for medical related specialties for enlisted personnel. Because there are a variety of missions, there is also a variety of required skills. As Bartz (1995) described, combat medics gain knowledge and expertise in school but lose them through disuse. Combat medics may serve in an environment that is non-medic oriented and lose the medic skills learned in school to other job skill requirements.

Cloonan (1995) and De Lorenzo (1997a) addressed the training issue for combat medics. Cloonan (1995) described situations where combat medics were unable to demonstrate the use of medic skills associated with maintaining an airway. Cloonan is an

advocate of simulated training that addresses the realities of war. De Lorenzo (1996; 1997a; 1997b) discussed components of current combat medic training that may be non-essential, while critical components like clinical rotation, certification, and standard evaluation of the medic skills were missing.

Training

The combat medic skills needed to enhance casualty care include basic and advanced airway support, circulatory maintenance, hemorrhage control, stabilization of fractures, and wound dressings (Bellamy, 1984; Bellamy, 1987; Baker, 1990; Trunkey, 1990; Jagoda et al., 1992). Butler, et al. (1996) described the importance of field training exercises for combat medics in teaching various factors associated with forward care. These battlefield factors include enemy fire, medical equipment limitations, use of white light, noise, mass casualty situations, variable evacuation time, and tactical problems associated with transporting casualties. All of these situations can be addressed with simulated field exercises.

Combat medics' play an important role in providing soldier care for disease non-battle injuries (DNBI). Appropriate content related to DNBI is necessary to acquire skills to care for this type of injury. DNBIs can take up more than 50% of combat medic time when not in battle. Combat medics routinely manage sick call at the front for illnesses such as trenchfoot, gastrointestinal problems, and stress. Combat medics also need broad-based skills associated with combat survival, weapons familiarization, base defense, mass casualty, sick call, humanitarian relief, mental health care, preventive medicine, vector control, and care of refugee populations (Bellamy, 1987; Baker, 1996; De Lorenzo, 1997a, 1997b; Parisi, 1990; Howard, 1993; Hepps et al.1985). These added skills would prepare combat medics for the twenty-first century.

Blythe, Dembeck, and Murphy (1979) evaluated the effectiveness of the Instructional Systems Development (ISD) model of instruction as compared to the pre-existing traditionally developed course to train the United States Army basic medical specialists. The other purpose of this study was to measure performance capabilities of the new combat medics on tasks taught in the combat medic course. This testing was followed by cognitive reinforcement and skills testing of one to 24 months after graduation. The sample included 444 combat medics from the traditional course and 462 combat medics from the ISD course. These medics were assigned to 585 field units and 321 fixed institutions. Based on performance tests, the graduates of the ISD course performed as well as the graduates of the traditional course. The ISD course was better suited for the population of students from lower educational backgrounds.

Blythe, Dembeck, and Murphy (1979) also concluded that performance skills acquired in the combat medic course deteriorated rapidly without reinforcement. The end of course performance testing had high failure rates for tasks on which combat medic students had demonstrated proficiency less than six weeks prior. When performance testing was done in the field unit or MTF, combat medics with recent exposure to the resident course performed previously mastered medical tasks with a slightly greater

proficiency than medics who were away from the residence course longer. Results from the combat medic questionnaire revealed that graduates had inadequate exposure or practice to maintain proficiency. The mode of unit training for the new combat medics was not formal training but "on-the-job experience." Demographic variables, such as type of assignment and prior medical experience or training, did not increase the degree of performance proficiency.

A third conclusion from this study was that videotapes were effective for presenting new material and reinforcing previously learned material. Combat medic students exposed to videotapes only demonstrated satisfactory performance skills on selected tasks. Students taking the residence course who could not perform tasks to standard could watch videotapes and after a variable latency period could perform the tasks to standard.

The last conclusion centered on course materials and tests. Course materials exhibited inconsistencies and lacked specificity. Performance tests administered by instructors were not always in accordance with performance testing procedure developed for ISD protocol of instruction. The recommendations from this study brought changes to the basic combat medic course. One change was to include content that would help combat medics perform better in MTFs.

The Training Evaluation Division at the Academy of Health Sciences (TEDAHS), Fort Sam Houston TX (1981) conducted a follow-up evaluation of the effectiveness of the ISD model of instruction for training the combat medics. The sample included 47 combat medic students randomly chosen from four classes. Combat medic students were tested on skill performance immediately following the completion of the residence course during the field exercise. The average overall pass rate for performance testing of 47 combat medic students on 17 tasks was 57%. Combat medic students did not achieve a 50% or greater "go" rate on eight of the 17 tested tasks. The combat medic students also passed two of the three written tests during the evaluation period. Again student demographics, such as gender, course number, Subject Matter Expert (SME) evaluator identification, or test date did not predict success on the 17 tested tasks; the incidence of task failures were distributed over the entire sample group.

In 1987, the Individual Training Division at the Academy of Health Sciences, Fort Sam Houston examined first aid training during Basic Combat Training (BCT). The researchers examined 80 soldiers' hands-on performance of eight first aid tasks taught in BCT before and after revision of first aid training package. The tasks were "evaluate a casualty," "clear an object from the throat of a conscious victim," "perform mouth-to-mouth resuscitation," "apply a field or pressure dressing," "apply a tourniquet," "prevent shock," "splint a fracture," and "administer a nerve agent antidote to self". Results indicated that on average, combat medics could pass about one-half of the first aid performance tests, even though combat medics stated these tasks were taught and practiced during the BCT Course. A second finding indicated that hands-on performance scores did not vary across training sites for either the pre-revision or post-revision first aid training groups. A third finding indicated that first aid training experience prior to

basic combat training had little or no effect on passing the hands-on task performance. The overall findings indicated that a 50% readiness rate for first aid existed among recent basic training graduates.

Hayunga et al. (1988) expressed concern regarding the lack of combat experience current combat medics possessed compared to combat medics who served in prolonged wars; very few uniformed combat medics have experienced the realities of war. In fact, many combat medics lack the experience of delivering care in a peacetime environment, let alone a hostile environment where one must be prepared to improvise. Additionally, due to the expense, many combat medics have limited exposure to simulated field exercises. However, the expectation of proficiency and readiness remains.

Sustainment

Sustainment training for the combat medic is lacking in the Army Medical Department (Jagoda et al., 1992; Bartz, 1995; Butler et. al., 1996; De Lorenzo, 1996 & 1997a; Richardson, 1997). De Lorenzo (1997a; 1997b) states that the verification of proficiency falls under the responsibility of individual units. Sustainment efforts are inconsistent because unit schedules are heavy with field exercises that emphasize the needs of the unit but not of combat medics. Unit trainers in garrison and in the field must take responsibility to keep medics trained and ready (Bartz, 1995).

Very few controlled studies related to medic sustainment are reported in the literature. In Richardson's study (1997), half of the combat medics reported no weekly or monthly training. Nearly half of the respondents reported no quarterly training. In addition, 69% of the medics reported never attending Military Proficiency Training (MPT).

Zadinsky (1997) studied the extent to which nursing personnel in the active and reserve components of the AMEDD were prepared to provide patient care in a deployed or field status. A second purpose of this study was to describe the focus of medical readiness training required to meet knowledge and performance deficits. The sample at six study sites consisted of 1085 nursing personnel (medical surgical nurses, operating room nurses, nurse anesthetists, practical nurses, medical specialists, and operating room specialists) who would function in a deployed or field status. The breakdown of this sample included 599 personnel in the active component of the AMEDD, 132 personnel in the Army National Guard, and 354 personnel in the United States Army Reserve. There were combat medics (91B10) in the sample. Personnel in this study were interviewed, were administered a cognitive test, and were tested on 11 hands-on tasks (obtain a 12 lead Electrocardiogram (EKG), operate a suction apparatus, operate a cardiac monitor-recorder, calculate flow rate of an IV infusion, measure a patient's blood pressure, calculate an oral medication dosage, measure a patient's oral temperature, set-up Buck's unilateral leg traction, administer blood to a patient, treat a hemorrhaging patient, and triage casualties). The results of the study reported here pertain only to the combat medics.

An expert panel selected performance tasks. The evaluators received training related to evaluating selected skills. One skill (operating a suction apparatus) was dropped from testing because of equipment problems. The active component combat medics had a mean score on the hands-on task performance of 36%. The reserve component combat medics had a mean score of 39 %. On the written exercise the active component combat medics had a mean score of 47%, while the reserve component combat medics had a mean score of 44 %. Military rank had a strong relationship with the scores on the exercises. As a group, senior combat medics (E5-E9) in both active and reserve components scored significantly higher on both the written and hands-on exercises than personnel in lower ranks. Two other demographic variables predicted hands-on performance: education and work experience Intensive Care Unit (ICU) work experience, Adjective Checklist (ACL) course, Basic Trauma Life Support (BTLS), Emergency Medical Technician (EMT) education or certification). BTLS and EMT were especially helpful for personnel in the reserve component but not for the active component. Personnel with education or work experience scored higher on hands-on task performance. When analyzing the interview data, Zadinsky found that senior enlisted personnel (E5-E9) learned by a process of "learning by principles." They would learn general principles underlying the performance of a skill and then apply these principles to their specific clinical situation. Also being taught to improvise or "come up with something else to do the same job" helped them perform skills. The more junior personnel, who recently graduated from their training program, could not relate to the teaching method of "learning by principles" or being able to improvise. The junior group had the knowledge related to the skill and the ability to use the equipment, but could not apply the knowledge in order to perform the skills.

Duty assignment gave personnel an opportunity to use and build upon what they had learned in their training programs. Personnel working in a hospital could perform the skills, while personnel assigned to field units had difficulty with skill performance. The field personnel lacked the exposure to the clinical setting and were assigned non-clinical tasks. Zadinsky (1997) concluded that in peacetime, nursing personnel did not have the opportunity to practice and become proficient in many of the skills they must perform in a deployed or field status.

Combat medics lack a clinical career ladder. As combat medics gain rank, they leave the clinical area behind. A mechanism is needed for combat medics to have choices to advance in the clinical arena, education, or administration (Jagoda et al., 1992; Bartz, 1995; De Lorenzo, 1997a, 1997b; Richardson, 1997). Bartz (1995) recommended adopting combat medic competency assessments, not only for the day-to-day activities but also on skills and knowledge appropriate to the grade and MOS level. Bartz (1995) also advocated reentry assessment for combat medics that have been out of the combat medic role.

Adult Learning

Singhanayok and Hooper (1998) examined the use of learner-controlled cooperative learning groups and achievement and attitudes. Ninety-seven sixth graders

were assigned to either a learner-controlled cooperative group or a program-controlled individual learning group. These researchers found high and low achievers in the learner-controlled learning group performed better and had more positive attitudes than the program controlled individual group. In addition, high achievers did better than low achievers on the achievement posttest. For lower achievers, the greatest improvement was in the program-controlled condition and for high achievers, the learner-controlled condition. Strengths of this study include the use of random assignment to one of four treatment groups: source of control (program control or learner control) and grouping (individual or cooperative learning group). A limitation to the study is the use of a posttest design and not knowing achievement efforts of learners prior to the study.

Results of Singhanayok and Hooper (1998) support the findings from Carrier and Sales (1987) and Hooper, Temiyakarn, and Williams (1993) that cooperative learning endeavors encourage learners to discuss, disagree, and teach one another by a deeper processing of lesson content. Schnackenburg, Sullivan, Leader, and Jones (1998) studied learner preferences and achievement under different amounts of learner practice. This study examined the effects of program mode (lean program mode with basic amounts of learner practice or full program mode with extended amounts of learner practice) and learner preference for amount of practice on the achievement, time-in program, and attitudes of 204 university students. The students were randomly assigned to groups. Results indicated that students using the full version program with extended practice scored significantly higher on the posttest than those who used the lean program version. Assigning students to their preferred amount of practice did not yield a significant difference in posttest scores over assigning them to their less preferred amount of practice. There was no significant difference for time-in program (average time of completion of program version). Students generally preferred the shorter version of the program. The strengths of this study included adequate sample size and the use of random assignment to program version. A limitation of the study was the use of a posttest design assessing achievement after the treatment. Students in this study had a mean Grade Point Average (GPA) of 3.14 which is above the average student's GPA.

In summary, studies of adult learning suggest that cooperative, student-controlled learning strategies result in better performance. These principles can be applied to curriculum development in the combat medic program to achieve higher standards without lengthening the course.

Achievement Motivation

Achievement motivation is defined as an "individual's tendency to approach and master various tasks and to rapidly attain high standards" (Stinnett, Oehler-Stinnett, & Strout, 1991). Achievement motivation is a human need that may be inactive and latent showing no effect on behavior unless it is aroused. Achievement motivation is aroused by any task that challenges the individual. In this review, achievement motivation is examined in the context of training and the classroom setting. Much of the research on achievement motivation has been conducted with elementary, secondary, and

undergraduate college students. A couple of studies have direct implications for this study.

Chiu (1997) developed and validated the School Achievement Motivation Rating Scale. The sample consisted of 2063 elementary and secondary students. Results indicated the scale had a high correlation with grade point average and a moderate correlation with standardized tests. Moderate to high correlations were found between the scale and self-esteem measures.

Abouserie (1995) examined self-esteem and achievement motivation in college students. This researcher explored the relationship between 135 undergraduate college students' self-esteem and achievement motivation as determinants of the student's approaches to studying. The results indicated high achievement motivation influenced students to be more organized in studying and learning. Students with higher achievement motivation exhibited behaviors that enabled them to search for deeper meaning in learning situations. Students with low achievement motivation exhibited behaviors that reflected superficial learning.

In a series of experiments, Kanfer and Ackerman (1988) examined ability and motivation in learning complex psychomotor skills (air traffic control tasks). A total of 1052 Air Force enlisted personnel participated in three experiments. Results indicated in the initial stage of learning a complex skill, talking about goals instead of the steps associated with the skill produced decreased performance in high and low ability groups. Goal setting was motivational and facilitated complex skill performance in later phases of skill acquisition with the low ability performer benefiting the most from goal setting. The researchers also found allocation of resources to self-regulation appeared to depend on the subjects' perceived confidence in their capability for goal attainment. Subjects with ratings of low self-confidence had low levels of self-regulation. Another interesting finding from this study was that individual differences in intellectual ability affected the character of self-regulator activity. With well-practiced activities, self-regulatory strategies are often known or acquired through training.

In summary, studies of achievement motivation suggest that students who are challenged in a personal way are more likely to succeed in learning and integrating complex skills. These principles can be applied to the combat medic curriculum development to achieve higher standards of performance without lengthening the course.

Psychomotor (Hands-on) Skills

Feedback

Milde's (1988) study explored the role of feedback in nursing students. Forty-eight nursing students were assigned to one of four feedback groups (videotape, checklist, videotape and checklist, and skill visuals with description of procedural steps). The results showed the "videotape" and the "skill visual with descriptor" groups performed the skill with significantly fewer errors and with greater finesse. The videotape group

performed the skill in less time than the other groups. The videotape and checklist group had longer practice session than the other groups. Cues for more practice were related to the uncertainty of the procedure for all groups. Practice without corrective feedback did not increase performance ability.

Simulations

In a study by Skelton and McSwain (1977) cognitive and hands-on skill decay of 30 trained Emergency Medical Technician – Paramedic level (EMT-P)s were examined. Skill deterioration was examined from six to thirty months after the completion of a paramedic-training program. The paramedics were randomly selected to participate in the study. Paramedics were tested on endotracheal intubation, starting an IV, applying Hare traction, and splinting/immobilizing the neck with a cervical collar and short spine board. Hands-on skills requiring the most technical knowledge deteriorated the fastest. Basic hands-on skills that were fundamental to advanced skills and were used frequently also deteriorated. The paramedics that completed training 30 months prior to the study had the greatest skill deterioration. The average deterioration rate at six months was 4.3%, twelve months 5.5%, eighteen months 1.5%, twenty-four months 1.0%, and thirty months 7.4%. Paramedics in the 18 and 24-month group had started back to school, accounting for the low deterioration rates during these months. Starting an IV was the hands-on skill with the least deterioration. At 18 months 10% skill deterioration occurred but at 24 and 30 months no deterioration occurred. When paramedics were tested on the four hands-on skills, evaluators found that their techniques were sloppy and incomplete when measured against the criteria. Even though the sample size was small, the design and data collection methods were sound. The paramedics in this study had a maximum of one-year experience. A more experienced group of paramedics might have had different results.

Blythe et al. (1979) evaluated the effectiveness of the Army's six-week combat medic ISD course and compared it to the pre-existing traditionally developed Combat Medic Course. This study measured new combat medics' performance capabilities on skills taught in the course following a latency period of one to 24 months. A second aim of this study was to analyze the impact of cognitive reinforcement in re-attaining proficiency. The ISD group (n=225) was field-tested on their medic skills after they satisfactorily completed the didactic portion of the combat medic course. The traditional group (n =784) was tested in the same manner as the ISD group.

Results revealed that the ISD combat medic graduates performed more proficiently than did the traditional combat medic graduates as measured by performance testing. Researchers also found that medic hands-on skills deteriorated rapidly without reinforcement. New combat medics performed the skills slightly more proficiently than experienced combat medics. The researchers also found that "on-the-job" training was the training mode and that sustainment training was generally non-existent. There was no significant difference between combat medics assigned to MTFs or line units regarding hands-on performance.

Latman and Wooley (1980) studied Emergency Medical Technician-Attendant (EMT-A)s and EMT-Ps retention of knowledge and skill proficiency. The sample was 4.1% of the total number of individuals trained and certified in Texas. The sample was stratified by level of training, length of time since their last EMT course (6, 12, 18, 24 months), and geographic region. The researchers found EMT-A's lost 50% of basic hands-on skill proficiency and EMT-Ps lost 61% of basic hands-on proficiency. Deterioration of Cardiopulmonary Resuscitation (CPR), traction, splinting, and bandaging proficiency was the greatest during the first six months following course completion. EMT-P's lost 61% of basic hands-on skill proficiency especially if they were out of their program two years or longer. For the EMT-Ps, skill decay was the greatest for CPR. The most rapid loss of skills for the EMT-Ps was during the first 12 months following their course. These researchers found slow loss of didactic knowledge of 10% over 24 months.

In 1981, Training Evaluation Division at the Academy of Health Sciences (TEDAHS), Army, re-evaluated the effectiveness of the ISD model of the 91B10 course by examining end-of-course combat medic student knowledge of combat medic skills and hands-on testing of 17 combat medic skills. The sample consisted of 47 combat medic students selected from four class rosters. Hands-on testing took place during the field training exercise at the end of the course. All the combat medics in the sample had passed the tests related to the 17 skills during the six-week course. Overall, the pass rate for the 17 skills was 57%. The researchers concluded that rapid skill decay had occurred. This pass rate was higher than previous skill testing during the course. Eight tasks were successfully completed by less than 50% of the sample. They were: change a sterile dressing (9%); complete a temperature/pulse/respiration graphic (28%); initiate an IV (28%); perform CPR (40%); administer an injection (43%); treat a chest wound (45%); draw medication into a syringe (49%); and initiate a field medical card (49%). The incidence of test failures was distributed over the entire sample group. When examining written test results, all sample members passed two of the three written tests. Written test difficulties arose from a Nuclear, Biological, and Chemical warfare test with a pass rate of 65%. Limitations of this study include a small sample size and a short time interval to examine skill decay (i.e.,the beginning to the end of the course).

Zautche, Lee, and Ethington (1987) examined skill decay in paramedics. Forty paramedics took hands-on testing for airway management, spinal immobilization, and IV therapy. These hands-on scores were compared to scores at graduation from a paramedic course. The time from graduation ranged from four months to two and one half years. Skill failure was defined as less than a 75% score. Paramedics out of school longer experienced the greatest amount of skill decay and performed skills in a deficient manner. The researchers also found hands-on skills requiring a sophisticated psychomotor activity deteriorated the fastest (i.e., hare traction and spinal immobilization). A couple of limitations of this study include a small sample size and not examining knowledge deterioration related to the tested skills.

Richardson (1989) studied the current level of combat medic skill competencies in critical life-saving tasks identified by the U.S. Army. A stratified convenience sample

of 150 combat medics from four unit types stationed at a Rocky Mountain post participated in the study. The researcher examined written test scores, self-assessment survey data, and hands-on performance scores. Combat medics assigned to MTFs reported that they tended to stay in these facilities during their career. Combat medics assigned to Table of Organization and Equipment (TOE) units usually spend their careers in field units. Combat medics in the study were not given the opportunity to rotate between TOE and Table of Distribution and Allowances (TDA) assignments. Another finding revealed that combat medic scores on the self-assessment survey, written test, and hands-on test increased with experience. The higher the rank of combat medics the better the medics scored against all measures.

A third finding was a significant difference between units in the area of Basic Life Support (BLS) certification, MPT, and the number of hours spent in unit training prior to hands-on performance testing. Over half of the sample reported no weekly, monthly, or quarterly training. Combat medics assigned to Medical Activities (MEDDACs) and Medical Centers (MEDCENs) reported a lack of medical training opportunities despite daily hands-on patient care activities. Less than half the sample reported current EMT-Basic (EMT-B) certification. Thirty-six percent of the sample had never attended Expert Field Medical Badge (EFMB) training. Sixty-nine percent of the medics in the study had never attended MPT training.

The final finding was a significant difference between rank and written test performance. Privates (E1) had the highest average total score and Specialists (E4) had the lowest. A total of forty-five combat medics from maneuver units (n=26) and combat support hospitals (n=19) completed 13 hands-on skills testing. Combat medics at higher skill levels (i.e., 91B20 and 91B30) were more competent in skill level 1 tasks than new combat medics. Privates (E1) directly out of medic training scored higher on neurological assessment, a component of trauma assessment, than other 91B10s with the rank of E2 through E4, indicating some skill decay after initial combat medic training.

Zadinsky (1997) described the extent to which nursing personnel in active and reserve components of the AMEDD were prepared to provide care in a deployed or field status. Zadinsky examined the focus of medical readiness training needed to meet knowledge and performance needs of nursing personnel. Readiness competence was measured by participants' performance of skills and written tests. The sample consisted of 1085 officer and enlisted personnel in six nursing specialty areas in the active and reserve components of AMEDD. There was a sub-sample of 128 combat medics.

There were several interesting findings from this study. One finding revealed that nursing personnel did not have the opportunity in their peacetime work environment to practice and become proficient in many of the skills and functions they would utilize in a deployed or field situation. A second finding from this study indicated that senior participants (i.e., higher experience and rank) had higher scores on both hands-on and written tests. Officer nurses with critical care and/or emergency room backgrounds performed better on both hands-on and written tests. This result was not found with enlisted personnel. Reserve enlisted personnel with Basic Trauma Life Support (BTLS)

and EMT education had higher scores (reserve combat medics and 91Cs) but this was not true for the active duty enlisted personnel (combat medics and 91Cs). On average, nursing personnel correctly performed 49% of the critical elements of the hands-on test and scored 52% on the written test. The combat medics' pass rates for the following skills were: obtain a 12 lead EKG (12.1%), operate a cardiac monitor (39.4%), operate a field oxygen delivery system (67.7%), operate a field suction apparatus (47.1%), calculate the flow rate for an IV infusion (36.7%), administer blood to a patient (37.2%), calculate oral medication dosage (80.3%), measure vital signs (80.3%), set-up Buck's traction (69%), treat a hemorrhaging patient (63.7%), and triage casualties (68.5%).

The final finding reported was a deficit in institutional training to sustain nursing personnel is clinical field competencies and battle-focused functions. The infrastructure for such training ranged from variable and diverse to non-existent. One limitation of the study was the small number of combat medics in comparison to the overall sample of 1085 nursing personnel. A second limitation was that written and hands-on tests reflected a combination of life saving and non-life saving skills.

In summary, over a half-dozen studies of combat medics and paramedics have shown that significant degradation in written and hands-on test performance occurs in the majority of graduates within a few months of graduation. This information suggests that a rigorous unit sustainment program is essential.

Anxiety

In the clinical area, clients, peers, instructors, and staff members may observe one performing a skill. In Goldsmith's (1984) study the results indicated a high state anxiety in both the "videotape, real person" group and the "slide-tape manikin" group.

Bell (1991) examined anxiety profiles of first semester junior baccalaureate nursing students learning and performing a complex psychomotor skill (urinary catheterization). Bell was also trying to determine the effect of pre-clinical skill evaluation on student anxiety and performance. The experimental group (n=14) received a pre-clinical skill evaluation by an instructor while the control group (n=16) viewed a videotape on urinary catheterization prior to evaluation. The findings reported that both groups had similar anxiety during performance of urinary catheterization in the hands-on laboratory. The experimental group reported significantly less anxiety during clinical application than the control group. Another finding of this study was the control group had a significant number of review/rehearsals prior to clinical application. Based on these findings the researcher concluded that anxiety is greater during the process of learning the skill and first time performance of the skill in a client situation. Limitations of this study included a small sample size, sample from only one nursing program, and a high attrition rate.

These two studies suggest that extended practice to reduce performance anxiety should be incorporated into the combat medic curriculum. This could be done without lengthening the course.

Practice

McManus and Darin (1976) examined EMT-Ps resuscitation knowledge and "hands-on" skill performance. Researchers prospectively examined 241 records of pulseless, non-breathing patients during the three-year study. The results indicated that 75 patients (31%) were successfully resuscitated in the field and 34 patients (14%) were "saved" or "discharged" from the hospital. The second finding revealed that out of 228 patients, 214 patients (94%) were successfully intubated. Another finding revealed that out of 239 patients that needed an IV, 216 patients (91%) received one. The researchers failed to mention the number of EMT-Ps in the study. Another limitation of the study was failure to discuss demographic information so the EMT-Ps experience level was unknown. A design using only record review can have incomplete data from failure to record events. The researchers did not explain how this event was handled.

Oermann (1990) and Lawther (1977) found that rest and short practice sessions with breaks reduced fatigue and reestablished learners' ability to focus on the task of learning a psychomotor skill. Hall and Welsh (1984) used a survey design to assess the effectiveness of a hands-on practice laboratory. Learners completed a survey before and after the hands-on practice laboratory experience. Out of 21 skills, learners perceived themselves competent on an average of 6.4 skills prior to using the hands-on practice laboratory. After the hands-on laboratory experience learners reported competency in 16.6 skills. The hands-on laboratory coordinator judged all learners competent in all 21 skills, which was based on written and hands-on testing of the 21 skills. Learners also stated they felt more comfortable in the clinical setting because they knew the principles underlying the skills, had practiced the skill in the laboratory setting, and were more self-confident. Hall and Walsh also surveyed learners, clinical faculty and agency staff members. These individuals reported the students to be competent, less anxious, and self-confident. A disadvantage to this study includes a failure to report the sample size, faculty members, and agency staff members.

Slovis et al. (1990) examined the success rates for initiating intravenous therapy (IV) in a moving ambulance by EMTs and EMT-Ps. The researchers reviewed 641 adult medical and trauma-related charts. The results indicated that at least one IV was started in 89% (361/404) of the medical and 92% (218/237) of the trauma cases. This percentage dropped off to 80% (48/60) for hypotensive medical cases and increased to 95% (75/79) for trauma-related hypotensive cases. This difference was not statistically significant but was clinically relevant. A major limitation of this study was reliance only on ambulance reports.

Wigder, Johnson, Cohan, Felde, and Colella (1996) evaluated 67 experienced paramedics, 22 new paramedics, and 18 emergency room physicians on the skill of lung assessment and sounds. The findings revealed paramedics did not assess lungs as accurately as emergency room physicians. In addition, experienced paramedics did not assess and interpret findings more accurately than new paramedics. The experienced and new paramedics improved their assessments over three trials when a medical history was

included. This change was not statistically significant but was relevant from a clinical perspective.

Pollock, Brown, and Dunn (1997) did a survey of paramedics to see what hands-on skills were perceived as important to the paramedic in training and practice. A sample of 600 paramedics, (a 44% return rate) participated in the survey. The hands-on skills perceived as the most important in pre-hospital care were endotracheal intubation, defibrillation, and client assessment. There were several limitations to the study. The sample of paramedics was from one geographic location. Paramedics from other parts of the United States might perceive other skills as being important in EMT-P practice. The instrument used in this survey had no prior validation and the instrument was strictly self-report.

In summary, these studies on the influence of practice on medic performance were not compelling, because they relied on surveys and record reviews.

Media Use

Many hands-on practice laboratories have media support (i.e., videotapes, computer simulations, textbooks, slides, audiotapes, etc.) along with mannequins to complete the simulation process. Research studies in media support to assist the teaching process of hands-on skills have had mixed results. A study by Baldwin, Hill, and Hanson (1991) examined two teaching methods and learners' hands-on performance and self-confidence. The sample consisted of 17 freshmen baccalaureate nursing students who were randomly assigned to either a control group (using textbook assignment and videotape without faculty assistance) or an experimental group (textbook assignment and videotape with faculty assistance). Faculty assistance consisted of demonstrating the hands-on skill and supervising practice. All students used the hands-on practice laboratory for skill practice. There was no significant difference in perceived self-confidence before or after skill performance. However, the mean score of both groups increased significantly after successful performance. This suggests that when students were successful with skill performance they experienced an increase in self-confidence level. There was no significant difference between teaching strategies in either performance or confidence levels. Some limitations of this study were the small sample size, the use of one nursing school, and only one psychomotor skill (taking a blood pressure).

Goldsmith (1984) used a 2 x 2 factorial design to examine the effect of two levels of media treatment (videotape and slide tape) and two levels of learning conditions (practice on a mannequin and practice on a real person role-playing the part of a patient), on learner variables (field orientation, trait anxiety, and state anxiety) proficiency and performance while teaching a psychomotor nursing skill (changing a sterile dressing). The sample consisted of 55 female second semester baccalaureate-nursing students with no prior experience with changing a sterile dressing.

The results of this study indicated that the media presentation, learning conditions, or an interaction between the two treatment variables had no significant effect on performance or proficiency. Neither learning condition was more stressful than the other. A significant interaction existed between learning condition and media presentation for state anxiety. There was an increase in state anxiety during the treatment. Learners in the "videotape, real person" group and the "slide tape, mannequin" group reported lower posttest state anxiety than the learners in the "videotape, mannequin" group and "slide tape, real person" group. Another finding from this study was that trait anxiety had a positive correlation with pretest and posttest state anxiety. Trait anxiety was not significantly related to performance or proficiency (time to do task) scores. The last finding from this study was that performance and proficiency scores were not significantly correlated. The quality of performance was not related to the time necessary for the learner to complete the task. A limitation of this study was the small sample size from one institution. Another limitation was only conducting a posttest performance test of changing a sterile dressing. Since the emphasis of the study was on performance of a skill, the researchers did not assess pre- and post-knowledge of the principles related to changing a sterile dressing.

Stratton et al. (1991) in a prospective study compared intubation training of paramedics using a mannequin only (n=39) versus mannequin plus-cadaver training (n= 21) groups. Results indicated that the success rate for the mannequin-only group was 82% and for the mannequin plus-cadaver group the rate was 83%, indicating no significant difference between the two groups related to intubation skills. The researchers failed to discuss the way they assigned the paramedics to either the mannequin only or mannequin plus-cadaver groups. The researchers also did not discuss how much practice time the paramedics had to perform this skill prior to skill testing. The last limitation was having only certified paramedics in the sample.

Hobbs, Moshinskie, Roden, and Jarvis (1998) compared classroom and distance learning techniques for rural Emergency Medical Technician-Intermediate (EMT-I) instruction. This prospective, non-randomized study compared three different instructional methods (i.e., traditional classroom with teacher, two-way audio/graphic computer network, and satellite-based audio/video network). A total of 57 students in rural Texas participated in the study. The outcome measures were mean test scores and attrition rates. All groups used the same textbook/workbook, syllabi, and computer-based tutorials. There were no significant differences in mean test scores between groups. Also no significant difference was seen in attrition rates between groups. These researchers concluded that distance-learning techniques were as effective as the traditional classroom with a teacher when examining achievement and attrition. Other studies (Wilkes & Burnham (1991), Dille & Mezark (1991), Pugliese (1994)) reported that distance learning techniques yielded higher attrition rates and lower cognitive performances than that seen in traditional classroom settings. These studies were conducted in the college setting.

Kember, Lai, Murphy, Siau, and Yuen (1994) studied student progress in distance education courses. The sample consisted of 555 part-time adult students enrolled in three programs of distance education courses at the college level. The variables of interest were

demographics, social integration (i.e., emotional encouragement, family support, and external attribution), academic integration, (i.e., academic accommodation and academic incompatibility) grade point average, and attrition. Results indicated learners who displayed intrinsic motivation and utilized a deep approach to learning were more likely to pass the course. Grade point average did function as an intervening variable between academic incompatibility and attrition. Learners that received low grades tended to experience attrition. Learners on the positive track were able to integrate study requirements with family, work, and social demands.

In summary, these studies suggest that while media-dependent methods of instruction may not always be better than traditional methods, they often are as good and do assist with distance learning. Presumably, they would have similar success in sustainment training.

Self-Directed Learning Modules

Jerin, Ansell, Larsen, and Cummins (1998) compared two strategies (traditional teacher led and computer-assisted learning) for maintaining EMT's skill of operating an Automated External Defibrillator (AED). This prospective study had a sample size of 105 EMT-Ds (EMT defibrillation). The sample was assigned to either a teacher-led training group or a computer-assisted learning group for six months. EMT-Ds received a hands-on pretest and posttest on AEDs. Results showed both groups improved, but no significant difference between groups was found. Computer-assisted learning was a cheaper means of delivering training. The computer-assisted learning package cost $1575 while teacher-led training cost $3240. This study was limited to examining experienced EMT-Ds regarding skill maintenance on AEDs. A cognitive pretest and posttest was not administered so underlying knowledge regarding AEDs was missing. The sample of EMT-Ds came from one city limiting the generalizability of the findings.

Todd et al. (1998) conducted a prospective, randomized trial to examine the effects of CPR self-instruction videotape with the traditional instructor-led American Heart Saver training program. Freshman medical students were randomly assigned to either the self-instruction videotape group (n = 42) or the traditional instructor group (n = 47). Results indicated that the self-instruction videotape group displayed CPR performance superior to that of the traditional group. Twenty out of 47 (43%) of traditional learners were not competent in CPR while 8 out of 42 (19%) of the self-instruction videotape group were judged not competent. The second result indicated that both groups achieved comparable scores on the CPR knowledge test. A disadvantage of this study was the use of a posttest design. Prior CPR knowledge and skill performance was not measured prior to the introduction of the learning intervention.

In summary, these two studies suggested that self-directed learning techniques may be effective in sustaining medical skills. It would be helpful to incorporate self-directed learning techniques into the combat medics sustainment-training program.

THEORETICAL FRAMEWORK

This section will provide the theoretical basis for the study. The various frameworks of adult learning, achievement motivation, and psychomotor (hands-on) skill concepts will be briefly presented. In addition, the work of Benner will be reviewed.

Adult Learning

Adults learn differently from children (Knowles, 1967, 1968, 1980; Lawler, 1991; Weingand, 1996; Burgess, 1996; Case, 1996; Lewis, 1997). Military trainers are faced with training adults with various levels of maturity. Smith and Delahaye (1987) describe learner maturity as the:

> "amount of knowledge the learner already has in a subject area, the level of interest in and the need to acquire the learning, the degree to which the learner is willing to accept the responsibility to learn and the degree of skill in learning process" (Smith & Delahye, 1987, p. 40).

Adults want to learn what is important and relevant to the training session. It is important to discuss learning differences between adults and children. Different training methods are needed to engage adult learners in the learning process. Adults bring to the classroom a sense of independence and ability to make decisions (Knowles, 1967, 1968, 1980; Case, 1996). Children, on the other hand, come to the classroom dependent. Others, like parents, teachers, and clergy, make decisions and guide the children (Knowles, 1967; Case, 1996).

A second difference between adult and children learners is inexperience. Adults bring to the classroom accumulated life experiences "by virtue of living longer than children" (Knowles, 1968, p. 370). Adults define themselves in terms of their experiences (Knowles, 1980; Case, 1996). Children lack the rich life experience base to draw upon for learning and define themselves in terms given to them by adults and other external events (Knowles, 1967).

A final difference between adult and child learners is in how they relate to time and learning. Adults want to apply learning immediately in order to help solve the problems of today (Knowles, 1980; Case, 1996). Content needs to be relevant and problem-focused with potential solutions. Children, on the other hand, experience a delayed application to learning (Knowles, 1967; Case, 1996). What is learned today will be applied later, when the child is older. Content is subject-oriented around facts.

Since adults learn differently from children, the experimental treatments in this study (experimental model schoolhouse and sustainment package for training) are built on four themes of adult learning: 1) learners are active in problem-based learning; (2) trainers are facilitators/coaches with the student-trainer relationship built upon mutual respect; (3) learners use critical reflection in the learning process; and (4) learners are introduced to self-directed learning.

Learners are Active in Problem-Based Learning

Adults learn by acting and reacting to their environment in a collaborative spirit where learner needs blend with organizational needs and educational criteria (Case, 1996). Adults process information in ways that make sense to them by tapping their own experiences and successes in order to apply knowledge (Knowles, 1968, 1980). This action-oriented learning uses a problem-solving approach. Information is presented in a useful and meaningful way in order to solve problems instead of a subject-matter orientation (Knowles, 1968; Andresen, Boud, & Cohen, 1995; Case, 1996). The problem-solving approach is participatory and learner-centered, placing an emphasis on personal experience, rich learning events, and the construction of meaning for learners (Andresen et al., 1995). Structuring learning around problem solving is directly related to learner motivation (Kanfer & Ackerman, 1988; Weingand, 1996; Garrison, 1997).

Another aspect of action-oriented learning is engaging as many senses as possible in the learning activity. Research results show greater learning and retention as more senses are involved in the learning process (Pike, 1987). Strategies to include multi-sensory involvement include, but are not limited to, computer simulations, hands-on practice situations, field trips, clinical experiences, group discussions, scenarios, and role-playing.

Burgess (1996) builds support for the use of multimedia delivery for adult learners. Using multimedia has the advantage of using higher-order thinking skills by allowing learners to question, manipulate, and evaluate information, and use information in a novel way. This is a very important delivery method for the medical field. Learners are given "what if" situations and required to make clinical decisions. Lewis (1997) also gives support to the use of multimedia to increase learner interest and enhance recall and understanding. This researcher states that enhanced recall and understanding results from stimulating multiple senses of learners. Using computer simulation is advantageous for learners because this mode of delivery follows a linear approach for learning fundamental concepts. In addition, the computer is a very patient tutor, repeating exercises as long as necessary, to skip known material already mastered, allowing learners to work at their own pace, and to privacy to work through mistakes.

Teacher/Trainer Role

A second theme related to adult learning is the role of the teacher/trainer. In a learning environment that is composed of adult learners, the teacher/trainer is a facilitator/coach (Knowles, 1968, 1980; Case, 1996). The student-teacher relationship is one based on mutual respect (Knowles, 1967, 1968, 1980; Weingand, 1996; Case, 1996). The teacher plays a key role as a clarifier, making meaningful connections for the learner between a knowledge gap and the problem to be solved. The teacher is not operating in a "telling" mode but an "asking" mode to narrow the gap between knowledge and problem solving (Knowles, 1980; Case, 1996). By communicating in this manner the teacher is respecting the learner as an adult capable of making decisions. The teacher is a supporter

of learners and the provider of resources. The teacher wants to challenge learners so they stay involved and engaged in learning.

The teacher also plays an important role for establishing a respectful environment that fosters group interaction and dialogue. A critical aspect of an adult learning environment is for learners to know each other and feel comfortable working and interacting with each other (Case, 1996). The teacher sets the stage for this environment by respecting the individual learner, knowing how important life experiences are for the relevancy of the learner. Each learner brings not only volumes of life experience but also qualities of experience (Knowles, 1968; Foley, 1995). A respectful environment becomes critical when learners are learning a new culture such as the military culture. Cultural knowledge is not learned *from* experience but *in* experience (Jacobson, 1996). Learners are faced with cultural diversity and having an environment based on mutual respect is very important. The teacher respects adult learners as individuals capable of making decisions and being autonomous in their activities (Knowles, 1968, 1980; Case, 1996). With an experienced-based, problem-solving approach to learning, it is important for adults to be treated as capable individuals in decision-making and to control certain aspects of their learning situations (Andresen et al., 1995).

Feedback/Critical Reflection

The third theme related to the adult learning framework used in this study is the use of feedback or critical reflection on learning outcomes. By using feedback/critical reflection, the learner learns techniques to analyze learning experiences (Knowles, 1967, 1980; Foley, 1995; Case, 1996). Initially the teacher/trainer provides feedback to learners regarding their performance. As the learner keys into feedback as a step in self-reflection, the learner then starts to identify strengths and weaknesses in various learning situations (i.e., classroom, lab setting, field setting). Another type of feedback the learner utilizes is from peers. Peers discuss performance and, therefore, the learner identifies critical elements of tasks, alters the way of performing the task, and learns to tolerate differing viewpoints (Foley, 1995). All of these types of feedback enhance learners' motivation (Bandura, 1986; Garrison, 1997; Kanfer & Ackerman, 1998).

Self-Directed Learning

Grow's (1991) Model of Staged Self-Directed Learning (SSDL) was based on key concepts of the Situational Leadership Model of Hersey and Blanchard (1988). Grow's model was used during the experimental classroom and served as the basis for the stand-alone sustainment package for this study.

In essence, Grow's model stresses how teachers can equip learners to become more self-directed in their learning within a formal educational setting. The goal of any educational process is to produce self-directed, lifelong learners. There are four stages incorporated into this model that identifies where learners are on a continuum related to self-directed learning. The model proposes that learners advance through stages of increasing self-direction and that teachers can help or hinder that development (Grow,

1991). The model relies on learner readiness (i.e., ability and motivation) and on learners ability and willingness to pursue the task at hand. Being self-directed in learning efforts is a combination of personality and situation. A learner may be self-directed in one subject but a dependent learner in another. Few learners are equally motivated toward all subjects. Grow (1991) also states that self-direction can be taught.

In Stage One of Grow's model, learners are low on self-direction. They need teachers to tell them what to do and to set goals for them. In this stage, learning is teacher-centered. Learners treat teachers as experts who know what learners need to do and learners respond to teachers who make them learn. When teachers encounter this type of learner, coaching with immediate feedback, drills, and lecture are common strategies used to teach.

In Stage Two, learners possess moderate self-direction. They are motivated and confident, but the subject matter is new to them. Learners respond to motivational techniques associated with persuading, explaining, and selling. Learners are very interested in learning and respond very positively to personal interaction from the teacher.

In Stage Three, learners have intermediate self-direction because they have skill and knowledge and see themselves as participants in their own education. They see themselves as being ready and able to explore a specific topic. The teacher is like a guide in this situation because learners need to develop a deeper self-concept, more confidence, more sense of direction, and greater ability to learn from others. Teacher strategies include discussion facilitated by the teacher, seminar format, and group projects.

In Stage Four, learners are highly self-directed learners who are willing and able to plan, execute, and evaluate their learning with minimal interface with teachers. A Stage Four learner uses experts, institutions, and other resources to pursue goals. Learners at this stage, take and accept responsibility for their learning, direction, and productivity. The teacher uses methods not to teach subject matter but to cultivate the learner's ability to learn. Learners are encouraged to cooperate and consult with each other but not to abandon responsibility. The teacher serves as a mentor who actively monitors the learners' progress and provides feedback.

According to Grow's (1991) model, good teaching matches the learners' stage of self-direction and allow learners to progress toward greater self-direction. What may be good teaching for one learner may not be good teaching for other learners. Good teaching in this model is matching the learners' stage of self-direction and empowering learners to progress toward greater self-direction.

In order to develop self-direction in learning, learners must encounter a respectful environment, be actively engaged in the learning experience, use feedback/critical reflection, possess a certain amount of learner control over the learning experience, and accept responsibility for one's own learning (Knowles, 1968, 1980; Foley, 1995; Case, 1996; Garrison, 1997).

Self-directed learning is defined as an "approach where learners are motivated to assume personal responsibility and collaborative control of the cognitive (self-monitoring) learning process (self-management) in the constructing and confirming of meaningful and worthwhile learning concepts" (Garrison, 1997, p.20). This definition has three important components: managing learning activities (self-management), self-monitoring, and motivation.

Self-management, or managing learning activities, focuses on goal management, learning strategies to meet the set goals, resource/support management, and learning outcomes (Garrison, 1997; Kuhl & Goschke, 1994). Self-direction is a series of volitional steps that change based on the flow of information (Kuhl & Goschke, 1994; Butler & Winne, 1995). Learners can modify these steps and reflect on what they do during the learning process. In this sense, learning does not occur in a vacuum but in an interactive environment with psychological and sociological factors interplaying. A benefit from self-management is that it makes learning more meaningful. A collaborative learning environment where learners' input can shape goals and activities is more conducive to formulating meaningful knowledge (Prawat, 1992; Resnick, 1991). Self-management does not mean learners are independent and isolated learners; the ability to be self-directed is situational (Grow, 1991). In one situation learners may be self-directed in one subject and dependent in another. Once self-direction is taught or developed it is transferable to new situations (Grow, 1991). In this regard self-direction is like a personality trait (Grow, 1991; Oddi, 1987).

External and internal feedback can act as catalysts during self-management activities. External feedback is knowledge of results. It can explain the nature of outcomes and cognitive processing that lead to actions (Butler & Winne, 1995). Some sources of external feedback are peers, teachers, and an answer section in a book or module. Internal feedback is information gained from intrinsic factors from the learner. As part of internal feedback or insight, learners gain information about themselves as they engage in learning tasks. Some of these insights consist of task success, successful learning strategies, and personal feelings during the learning experience (Kuhl & Goschke, 1994). Research supports the importance of feedback and confirmation for learners lead to more effective learning (Bangert-Drowns, Kulik, Kulik, & Morgan, 1991; Kulhavy & Stock, 1989).

Self-monitoring is the process where learners take responsibility to acquire personal meaning for learning. This personal meaning is achieved by the use of critical reflection and collaborative confirmation (Garrison, 1997; Grow, 1991). By integrating new ideas with previous knowledge, learners' experience a critical awareness of meaning (Mezirow, 1985). Being responsible for one's own learning necessitates a willingness and ability to self-monitor the learning process. Self-monitoring is also dependent on external and internal feedback. Learners engage in self-monitoring of their progress through observing, judging, and reacting to tasks and activities. Reflective thinking encourages learners to relive the experience in order to "develop individuals who are capable of monitoring themselves in a variety of situations" (Garrison, 1997, p.5).

Learners may not always monitor learning effectively (Walczyk & Hall, 1989; Pressley, Ghatala, Waleshyn & Pirie, 1990). This concept suggests that when learners are left to monitor their own learning, they often inadequately monitor the level of completeness of their learning. Schommer (1990, 1993) found that when learners believe learning is simple they are overconfident in their learning, which reflects deficient monitoring.

Achievement Motivation

Motivation plays a critical role in initiating and maintaining effort toward learning and achievement of learning goals (Garrison, 1997). Motivation is also external or internal. External motivation comes from sources other than oneself (i.e., grade of A, praise from a teacher). Internal motivation comes from within an individual (i.e., satisfaction when doing a good job, feeling satisfaction when exerting maximal effort on a project). Learners' needs and values provide the reason for persisting in a task. Shared control leads to intrinsic motivation and then to responsibility (Garrison, 1997; Grow, 1991; Butler & Winne, 1995).

Learners may have a high need for achievement, but if no situation arises that challenges this need, learners will not demonstrate the tendency to master tasks. The achievement motivation need is expressed when learners *want* to complete a task *well* because it is *worthwhile* to do well and be successful and avoid failure (intrinsic value is in the goal itself). How well learners perform makes them a success or failure in their own eyes - if they are motivated by the achievement need. The need to be successful and avoid failure is a major factor in human behavior and affects performance (Duda & Nicholls, 1992).

The development of achievement motivation is unclear. Some researchers (Heckhausen, 1967; Evans, Hearne, & Zwirner, 1975; Travers, 1977) take the position that achievement motivation is acquired through learning, while others (Zigler, 1970; Piaget, 1971) propose that the achievement motivation need is inherent in human nature. Certainly external factors such as gender, age, ethnicity, religious training, conditions in the home environment, patient-child relationship, culture, societal roles, self-esteem, and past experiences influence the learner's expression of achievement motivation (Zigler, 1970; Travers, 1977).

Motivation is the "extent to which an individual sustains interest and effort towards task acquisition" (Kanfer & Ackerman, 1988). Motivation is necessary during all phases of the learning process; it is the driving force. Finding information about a topic, paying attention to and processing the information, turning information into learning results, and applying learning in the real world require motivation (McKinney, Mason, Perkerson, & Clifford, 1975).

Motivation is critical during three phases of the learning process: beginning a task ("entering motivation"), maintaining task activity, and self-regulation/self-management. If motivation is missing during these critical times learners do not complete tasks.

Entering motivation is needed if learners are to become interested and committed to a certain task and form learning goals. Learners draw upon their knowledge and beliefs to interpret task properties and requirements in order to commit with the intent to act. When learners commit to a task and formulate learning goals, they are aware of the degree of effort and persistence needed to complete the task. When learners perceive that the learning goals meet their achievement need and are achievable, the learner has a higher entering motivational state than learners that perceive that the learning goals do not meet their needs or the goals are not achievable (Duda & Nicholls, 1992; Stipek, 1993; Garrison, 1997). Variables affecting entering motivation include attitudes about self and self-regulation. Learners evaluate how their performance capabilities, chances for success, confidence level, and competency relate to the learning goals. Bandura (1986) calls attitudes about self, a " self-efficacy". Self-efficacy is the learners' ability to organize and implement actions toward learning goals.

Learners' attitudes regarding self-regulation, or being self-directed in learning, also influence entering motivation. Self-regulation involves the learner taking responsibility for the construction of personal meaning of the learning experience (Garrison, 1997). Therefore, learners are active participants in the learning process.

The second critical time of the learning process where motivation is important is when the learners work on a task. During task motivation, the learner is engaged and focused on the task. Learners are persistent in the learning activity leading to goal completion. Task motivation is characterized by learners' effort at and persistence with learning goals. Learners are active participants in the learning activity that directs and sustains motivation because learners experience task-control and self-monitoring skills associated with self-regulation (Kanfer, 1987; Garrison, 1997). The degree of diligence exerted by learners reinforces accepting responsibility for achievement or the desired educational outcome (Corno, 1993). Motivation during the task is influenced by internal and external factors. Internal factors are inherent in learners. Examples of internal factors are viewing the learning activity as worthwhile and important to accomplish and exercising control over the learning activity. External factors are exterior to the learning experience. Examples of external factors include the attractiveness of learning (what will it give me) and rewards.

Vicarious learning, like watching a peer perform a complex psychomotor skill, can increase motivation when the peer is successful in the performance (Paris & Byrnes, 1989; Schunk, 1989). Watching others perform can increase confidence in oneself by offering task cueing and realizing the task is achievable.

Motivation to assume responsibility in learning is an essential component of self-regulation and self-management. Self-regulation occurs when learners accept responsibility for the learning and adopt behaviors that are systematically oriented to the attainment of learning goals. Learners conduct a critical assessment of their behavior and performance during the learning activity. Motivational factors occur during self-monitoring, self-evaluation, and self-reaction activities.

During self-monitoring activities, learners focus attention on specific aspects of their behavior as it pertains to the attainment of learning goals. Internal (self-reporting) and external (peer evaluation) feedback strengthens self-monitoring activities (Kanfer & Ackerman, 1998). Learners perform self-monitoring regularly rather than intermittently. The behavior must be observed close in time to its occurrence (Schunk, 1989).

During self-evaluation, learners compare their performance against a gold standard. Examples of some gold standards include a grading system and National Registry Skills Sheet (Samuels et al. 1994). Standards are used to inform and motivate learners; they inform learners of their performance toward the goal. When learners are making progress toward the learning goal, self-efficacy is enhanced and motivation is sustained.

Self-reaction occurs when learners experience an affective response of satisfaction or dissatisfaction related to goal attainment and self-efficacy. The affective response to goal attainment and reward enhances motivation and influences self-efficacy (Bandura, 1986).

Self-management occurs when learners are able to manage learning activities from the perspective of external learning resources and support. Learners need material resources available for use, flexible pacing of learning activities, questions answered, and feedback provided when needed (Garrison, 1997). Motivation occurs during self-management when learners have some control over their learning activities and are able to provide input that can shape activities to be more meaningful. A collaborative learning environment enhances self-regulation and self-management (Garrison, 1997).

Learners can acquire self-regulated behaviors in the course of school instruction (Schunk, 1989). Training strategies that incorporate instruction to help learners observe, judge, and react to the learning process facilitate learners to be self-regulated.

Psychomotor (Hands-on) Skills

The use of psychomotor (hands-on) skills is an integral part of combat medic practice. These skills are used to assess patients, implement care, and save lives on the battlefield. Once combat medics have learned and mastered psychomotor skills it is important to maintain these skills. Psychomotor (hands-on) skills are performance activities that require the integration of related knowledge of principles and values (Singer, 1975). This definition implies emphasis on the motor aspect of the skill, but the integration of the cognitive and value domains of learning are also of importance. In general, research in the health sciences regarding psychomotor skill learning is scant. Research in psychomotor skill development in EMT programs is especially scarce.

Gagne (1961) summarized military training activities into three categories: 1) motor tasks (i.e., shooting a gun and starting an intravenous [IV]); 2) procedures (i.e., operating a radio, bleeding control/shock management); and 3) troubleshooting or diagnosing malfunctions (i.e., troubleshooting an electronic circuit or performing trauma

assessment). All three of these training categories require using certain principles: 1) task analysis, 2) sequencing the order of task steps, 3) motor performance of the task, and 4) accomplishing the task according to a standard (Gagne, 1961).

Learning a psychomotor (hands-on) skill is focused on a series of motor actions to accomplish a specific task (i.e., starting an IV). When learning the psychomotor skill, the learner: 1) identifies a goal (i.e., purpose of the task), 2) identifies environmental areas related to the goal (i.e., type of IV catheters, position of the arm, condition of the patient, etc.); 3) formulates a motor plan (i.e., movement pattern related to starting an IV), 4) executes the motor plan (i.e., carries out the steps of starting an IV), 5) receives feedback (i.e., information about executing the motor plan), and 6) revises or accepts the motor plan based on feedback (Gomez & Gomez, 1984; Oermann, 1990; Reilly & Oermann, 1992).

As with other types of learning endeavors, learners must want to learn the psychomotor skill, give attention to the specific task, activate memory for motor plan storage, retain the motor plan, and transfer the motor plan to a similar type of skill. The ultimate outcome in skills learning is the development of smooth, coordinated, precise movements and competent skill performance (Gomez & Gomez, 1984; Oermann, 1990).

Several factors influence learners' ability to grasp psychomotor (hands-on) skill learning. These factors include mental practice, feedback, simulations, anxiety, practice, media use, and self-directed learning modules.

Mental Practice

Mental practice (i.e., mental imagery, mental rehearsal) is a way to acquire, rehearse or improve a motor skill without having gross or fine motor movements (Whetstone, 1995). Learners must concentrate fully on the details of the task (i.e., starting an IV) and the flow or steps of the task during implementation. At this point learners do not physically implement the task. The use of mental practice for skill learning related to competitive sports is not new (Druckman & Swets, 1988; Woolfolk, Murphy, Gottesfeld, & Aitken, 1985). The greatest effect of mental practice occurs in areas where high cognition, fine motor control, and hand-eye coordination are essential elements of the activity (Whetstone, 1995).

Feedback

Feedback is information gained regarding a motor skill (i.e., starting an IV) either during or after the completion of the motor task (Gomez & Gomez, 1984; Milde, 1988; Oermann, 1990; Landin, 1994). Feedback plays a critical role in learning. Feedback enables the learner to modify the performance of the motor skill until the components are performed in the proper order and mastered. Feedback is also important to self-evaluation. Learners need feedback in order to correct errors. When giving verbal feedback regarding motor skill performance, the feedback should be concise and be logically associated with the task (Landin, 1994).

Anxiety

A mild degree of anxiety or stress can enhance psychomotor skill learning (Gomez & Gomez, 1984; Oermann, 1990). Excessive anxiety/stress will interfere with psychomotor skill learning and performance. Learners may feel learning a psychomotor skill is a "public event" because a class of students is broken down into smaller practice groups. In addition to peers watching one's performance, the instructor also observes.

Practice

Another important factor in psychomotor (hands-on) skill learning is practice. Practice enables learners to try out the skill, refine movements, and repeat the steps of the skill (Oermann, 1990; Gomez & Gomez, 1984). Gomez and Gomez (1984) recommended that the practice session simulate the actual environment where the psychomotor skill will eventually be performed. The use of simulations provided learners with a realistic experience that is action oriented without the constraints and distractions found within the real life situation like that found in a hospital, clinic, or ambulance (Hanna, 1991).

A hands-on practice laboratory is an excellent place to teach psychomotor skills. This laboratory offers learners a safe, controlled, and less distracting environment than the clinical setting to initially learn psychomotor skills. When in the hands-on practice laboratory and using skill checklists learners gain accountability, increase self-responsibility, and decrease anxiety about performing the skill (Hall & Welsh, 1984). The clinical/field experience provides students the opportunity to develop new patterns of thinking, feeling, and doing that serve not only the individual but also the greater society. In the clinical/field setting students learn to apply theories of action to real clinical problems, develop skills in handling ambiguity and become socialized into the profession (Reilly & Oermann, 1992).

Clinical rotations provide real life experiences with real clients and real problems which enable learners to use knowledge, develop problem-solving and decision-making skills, and develop a commitment to be responsible for one's own actions (Benner, 1984; Reilly & Oermann, 1992; Bashook, 1995). The clinical experience facilitates students' development of skill in divergent thinking and ability to deal with ambiguities inherent in clinical practice. Unpredictability, multiple distractions, and variable time demands prepare the student for the realities embedded in clinical practice.

Clinical assessment involves "an individual's performance in a selected sample of client encounters and using findings to judge clinical competence" (Bashook, 1995, p. 1). The reason for conducting clinical assessments for competence is derived from public concerns regarding the quality of health care and the safety of clinical activities performed by practitioners (Reilly & Oermann, 1992; Girot, 1993; Bashook, 1995).

Professional organizations (i.e., American Medical Association (AMA), American Nurses Association (ANA), National Registry for Emergency Medical Technicians (NREMT) establish the stature and credibility of practitioners. In training

programs leading to certification for clinical practice, instructors evaluate students. The training programs are evaluated by the professional organization to assure they contain appropriate experiences and opportunities for learning. Clinical experience during training programs that leads to clinical practice is a standard.

In addition to the required 110 hours of instruction, the EMT-B National Standard Curriculum (Samuels, Bock, Maull, & Stoy, 1994) requires, student interactions in a clinical setting. The curriculum is very liberal regarding the type of clinical setting (i.e., ambulance runs, emergency rooms, intensive care units, physician offices). The EMT-B Curriculum does not set a certain number of hours for clinical experience. Instead, students must perform a minimum of five patient histories and assessments. The EMT-B Curriculum does stress students' safety and professional behavior during clinical interactions. Students having difficulty in the clinical/field setting must receive remediation and redirection. If unsuccessful, students may be required to repeat the clinical experience in order to become competent.

There are several reasons why training programs in health care professions should have clinical/field rotations. The reality of client problems guarantees students exposure to variations in "normal responses" that challenge students to seek alternative knowledge and skills for resolution. Burnard (1995) calls this reflective practice. The exposure to clinical realities of complexity, uncertainty, conflict, and instability teaches students to select alternative knowledge and skills to solve clinical problems. Some aspects of clinical practice have one action possible while others have multiple actions. Clear-cut answers to clinical problems may be the exception rather than the rule.

Secondly, exposure to clinical/field experience teaches students to think like professional health care providers. A professional health care provider utilizes problem-solving, decision-making, and divergent thinking skills while incorporating values of social consciousness, ethical and moral responsibility, and responsibility to society (Reilly & Oermann, 1992; Burnard, 1995; Atkins & Williams, 1995). Clinical agency staff members serve as mentors or preceptors modeling professional behaviors that are the hallmark of a service profession (Atkins & Williams, 1995).

A third reason for incorporating clinical/field experiences into training programs is that experience awards students the opportunity to develop the commitment to being responsible for their own actions related to practice. When encountering real clients in the management of real problems a sense of being responsible for one's actions is clear and goes beyond a textbook description.

Another reason to have clinical/field experiences is to allow students to learn the language, policies, procedures, and rules governing a selected agency. Students learn medical language in the classroom but get the opportunity to apply this knowledge in the clinical setting when interacting with other health care providers. Interacting with health care providers gives students the opportunity to develop the feeling of teamwork in order to provide quality care. No one health care provider meets all the needs of the clients and

students need to experience working with a variety of health care providers to learn how to be a team member.

The last reason for incorporating a clinical/field experience into a training program is to transfer hands-on skills from the laboratory setting to the clinical setting. Performing hands-on skills is an important aspect of providing care to clients. Students receiving guided supervision from an instructor or preceptor receive the appropriate feedback for continual hands-on skill development.

Media Use

Distance education has been developed and used by the open university system for years. Its application to training by organizations as opposed to education is a recent occurrence (Seidel & Chatelier, 1994). The Defense Intelligence Agency Joint Military Intelligence Training Center (JMITC) initiated its distance education process in 1992 (Grant, 1996). Distance education is defined as the "universe of teacher-learner relationships that exist when learners and teachers are separated by geographic space and/or by time" (Moore, 1993, p. 30). Distance education is learner centered allowing learners to pursue their own needs and preference.

Distance training is defined as "teacher-learner relationships driven by the needs of the organization to have effective, task-oriented skill acquisition by learners in a cost-efficient manner" (Devlin, 1993, p.260). In this model the learning needs of the learners are assumed by the organization. Distance education/training models are beginning to place more emphasis and responsibility on learners to blend the needs of the organization and that of learners (Devlin, 1993).

There are several reasons why organizations utilize distance training as a way to improve individual performance within the organization. The AMEDD has a need for continuous learning, adaptation, and retraining of its organizational members. The restructuring of military force in size and composition, along with decreased funds for real experiences and equipment, has focused attention on how to maintain a well trained and flexible force (Seidel & Chatelier, 1994). Combat medics need to maintain their medical knowledge and skills in the light of an ever-changing knowledge explosion. Distance education/training is an avenue for training to occur in a shorter time for those combat medics in need of such training (Devlin, 1993).

Another reason to incorporate distance education/training is its efficiency in terms of cost, flexibility, and accessibility. Distance training is directed to the point of need and is an excellent way to disseminate information (Jennett & Premkumar, 1996). The last reason for utilizing distance education/training is to evaluate levels of proficiency. The ability to assess levels of proficiency is critical to job performance.

Organizational training is no longer a discrete centralized event. Today training is viewed as a continuous process delivered to the point of need dispersed through the organization (Devlin, 1993). Distance education/training is the means to accomplish

training as a continuous process. It goes beyond a task-based procedural approach to a flexible problem-solving approach based on continuous application and integration of new knowledge (Devlin, 1993). The diverse settings where combat medics practice their job require flexibility. Distance education/training allows for flexibility of training based on a unit's daily priorities, time constraints, and the number of combat medics to train.

Another characteristic of distance education/training is the focus on individual learners. Today learners are more self-directed, determine their own learning goals, seek learning experiences, and participate in evaluation decisions (Moore, 1993). Learners are more responsible for their learning and they formulate ways to achieve learning objectives (Sauve, 1993; Yacha, 1996; Billings, 1997). The various formats of distance education/training technologies also allow learners to be interactive with the learning process (TRADOC, 1994; Grant, 1996).

"From Novice to Expert"

The second source of the framework is Benner's work (1982, 1984; Benner & Tanner, 1987; Benner, Tanner, & Chesla, 1992; Benner, Hooper-Kyriakidis, & Stannard, 1999). The central theme of this work is clinical knowledge gained over time. Benner describes clinical knowledge as having five levels of proficiency. Benner's work is an application of the Dreyfus Model of Skill Acquisition (1980) to nursing practice. The Dreyfus model accounts for increments in skilled performance (i.e., motor skill, cognitive skill, and affective skill) based on experience as well as education (Benner, 1982).

The five levels of proficiency a practitioner passes through are novice, advanced beginner, competent, proficient, and expert. These levels of change reflect a movement from reliance on procedures and rules to the use of past experience as a guide. In addition, the practitioner moves from looking at the clinical situation from relevant bits and pieces to a complete whole in which only certain parts of the situation are relevant.

Novices lack experience in clinical situations. These individuals had exposure to some clinical situations during their educational process where they were closely supervised. Novices use procedures and rules taught to them in school to guide their actions. The clinical situation is viewed as a series of measurable tasks to be completed like taking vital signs, measuring intake and output, and starting an intravenous. Novices are unable to use discretionary judgment (Benner, 1982, 1984). No rule can tell novices which tasks are most relevant in the real situation or what action is an exception to the rule. Novices rely on more experienced practitioners to guide safe clinical practice. The new combat medics graduating from combat medic school are at the novice level of proficiency.

Advanced beginners demonstrate marginally acceptable performance. At this level, the individual relies on a senior team member to point out recurrent meaningful aspects of a complex situation. Advanced beginners have had a little more clinical experience than novices and in simple clinical situations can identify some recurrent meaningful components in a situation. Advanced beginners need help setting priorities

because they are just beginning to perceive recurrent patterns in their clinical practice (Benner, 1982, 1984)

Competent practitioners have approximately two to three years of clinical experience. These individuals begin to rely on long-term goals and plans to determine which aspects of a situation are important and which can be ignored (Benner, 1984). Competent practitioners lack the speed and flexibility of experts but do feel mastery, cope with situations, and manage many contingencies of a clinical problem.

Proficient practitioners perceive situations as wholes rather than parts. Decision-making is less labored and these individuals can focus on an accurate aspect of a clinical problem (Benner, 1992). Proficient practitioners exhibit a deeper understanding of the clinical situation and start to handle ambiguity with greater skill.

Expert practitioners have an enormous background of clinical experiences. Experts no longer rely on rules, procedures, or guidelines to guide actions. Experts use an intuitive grasp to deal with the complex clinical problem (Benner, 1982, 1984; Benner & Tanner, 1987). Experts zero in on the nature of the problem without wasteful consideration of unfruitful possible alternatives.

According to Benner's model, experience is not merely a passage of time. It is a refinement of preconceived notions that leads to holistic thinking (Benner, 1982, 1984). As practitioners gain clinical experience the specific situation or clinical problem goes from a series of pieces to a holistic approach.

This model supports the importance of knowledge development and clinical career development. Clinical excellence takes time to develop and individuals need to be nurtured by experts. New practitioners need guidance from senior personnel who are the experts and the opportunity to maintain the medic skills they learned in school. Experienced combat medics also need to maintain their medic skills and move on to the next level of proficiency.

RESEARCH QUESTIONS

1. What is the experienced combat medics' proficiency in performing four core life-saving skills in heavy, light, and airborne TOE units MTFs (MEDDACS/ MEDCENS)?

2. What are the experienced combat medics' and their direct-line supervisors' *perceived* levels of proficiency in performing four core life-saving skills, preparedness to perform different medic missions, barriers experienced in sustainment training, and opportunities experienced in sustainment training?

3. What are the combat medics' proficiencies in four core life-saving skills upon graduation and at six and nine months later?

4. What factors contribute to improved combat medic student performance at the combat medic course?

5. What is the cost of the experimental combat medic training model and a company of 300 combat medic students?

6. How effective is the newly developed sustainment package in the retention of combat medic proficiency in four core life-saving skills?

7. What is the estimated reliability of the MFRI in measuring individual and unit performance readiness?

HYPOTHESES

1. There are no differences between the experimental and control groups in knowledge acquisition and performance on four core life-saving skills, school achievement/motivation score, self-directed learning score, Science Technical Score (ST)/General Technical Score (GT), recycle rate, course grades and EMT-B certification score at the completion of the combat medic course.

2. There are no differences between the experimental and control groups in knowledge retained, performance on four core life-saving skills, core life-saving assessment score, and EMT-B certification score at the combat medic course completion, at six months following completion, and at nine months.

3. There were no differences between the experienced combat medics' performance on four core life-saving skills, core life-saving assessment score, and perceptions of performance at baseline to six months.

ASSUMPTIONS

1. Combat medics throughout the U. S. Army have had a uniform mechanism for medic training where every combat medic has the opportunity to learn and practice medic skills (i.e., medic training using the Combat Medics Manual (STP 8-91B15-SM-TG or MPT guidelines)).

2. Excluding times of deployment, emergency leave, or convalescent leave, combat medics will be available for the six and nine month follow-up testing.

3. Once the Forces Command (FORSCOM) and Medical Command (MEDCOM) taskings were sent to the specific sites within the respective Corps Surgeons' Office, this study would receive priority outside of deployments, emergency and convalescent leave, with unit commanders endorsing study participation. Attrition from the study would be no more than 10%.

4. The 232nd Medical Battalion at Fort Sam Houston, would not incorporate changes into their ongoing combat medic curriculum during the time frame of the study in order to make comparisons of certain variables during Phase II.

5. The onsite study liaison personnel at Fort Hood would implement the stand-alone sustainment package as designed.

6. Communication between the study team, the 232nd Medical Battalion, the four Corps Surgeons' Offices, liaison personnel at Ft. Hood, and the MEDDACs/ MEDCENs would be as streamlined as possible.

LIMITATIONS

1. The first line supervisors' are not the company commanders, but the NCOs, 91B20s, or 91B30s. The perception of the combat medic by the company commanders is not known. The company commander controls the destiny of the combat medic with regard to non-medical priorities. The study team experienced inconsistencies with company commanders related to releasing the combat medic to train with the study sustainment package.

2. The 232nd Medical Battalion instituted several changes in ongoing combat medic training during the course of this study. Examples of changes include giving a pretest prior to the National Registry Examination and adding night IV training during the Field Training Exercise (FTX). The impact of these and other changes on Phase II results is not known.

3. The research team was unable to obtain the retest rate for the experimental and control groups during Phase II. Due to logistical problems beyond their control this information was unavailable.

4. The research team did not conduct hands-on skill testing of the four core life-saving skills during Phase II. The instructors that taught the combat medic course did this testing.

5. The stand-alone sustainment package at Fort Hood for the experienced combat medic was not a stand-alone sustainment package but an enhanced package with liaison teaching. The new combat medic from Class one was affected by this situation.

6. The attrition rate was in the range of 20-25% at each site, above the 10% attrition rate projected for the study. The attrition rate was due to deployment activities, the Kosovo conflict, regular, emergency, and convalescent leave.

7. The new combat medics leaving the combat medic course were given FORSCOM assignments from Personnel Command (PERSCOM). PERSCOM made these assignments based on FORSCOM needs (Padgett, 23 June 1999). As a result of these assignments, new combat medics were not assigned equally to MEDDACs/MEDCENs, and TOE units thereby under-representing combat medics from MTFs.

8. There were 14 data collectors in this study. Only one person made all site visits to collect data. Even though inter-rater agreement was established on all data collectors and strict guidelines were followed, observer error cannot be ruled out.

9. Nuclear Biological Chemical (NBC) skills were evaluated on the written test but not the core life-saving hands-on performance test. Due to the cost and logistical aspects of trying to obtain NBC gear and supplies to test all combat medics, the research team decided not to evaluate the hands-on performance of NBC skills.

RELIABILITY AND VALIDITY OF INSTRUMENTS

The following is a description of the instruments used in the Medic Training 2000 Study. The instruments had reliability testing prior to use in this study.

Armed Services Vocational Aptitude Battery (ASVAB)

The ASVAB was designed by the DoD to identify the vocational aptitudes of its recruits. It is administered to all recruits during the enlistment process. A copy of the ASVAB was unavailable to the research team due to its controlled nature. Information on its validity and reliability is available from the U. S. Army Research Institute of the Behavioral and Social Sciences.

Research has shown that the ASVAB is a reliable and valid instrument. In a study conducted by Earles and Ree (1992), the ASVAB sub-tests were correlated with the final school grades earned by United States Air Force recruits in 150 technical training courses. The validity coefficients for the 11 sub-tests ranged from 0.67 to 0.77.

Experienced Combat Medic Questionnaire

This questionnaire was developed by the researchers to assess the perceptions of readiness and skill proficiency of the 91B10 combat medics E2 to E4 (Appendix A). This questionnaire is a 42-item instrument. The components of this questionnaire include proficiency in life-saving skills, unit resources for training, patient contact, train-up, valued team member, and skills. Content validity was established through analysis of a skill matrix, the 1998 Training Task Selection Board (TTSB) recommendations, and a panel of experts. The internal consistency of this instrument could not be established, because it was designed as an opinion survey (i.e., items 1 to 45) and a fact finding survey (i.e., items 46 to 50) rather than around a single theoretical construct.

School Achievement Motivation Rating Scale (SAMRS)

The SAMRS is a 15-item scale developed by Chiu in 1997 (Appendix B). Each item describes a behavioral characteristic related to academic achievement motivation. The characteristics include tendencies of being persistent, overcoming obstacles, maintaining high standards, accomplishing something difficult, responding positively to competition, and being able to take risk of failure. There are five rating choices for each item: always, frequently, occasionally, seldom, and never.

In a study conducted by Chiu (1997), the SAMRS was administered to 2063 elementary and secondary students (1072 males and 991 females) selected from the school districts located in small towns and cities in central and north central Indiana. To establish the validity of the SAMRS, data on a number of measures of cognitive and affective functioning were compiled: course grades, Grade Point Average (GPA), the California Achievement Test (CAT), the Metropolitan Readiness Test (MRT), the Smith Need for Achievement Measure (SnAch; Smith, 1973), the Self-Esteem Rating Scale for Children (SERSC; Chiu, 1987), the Coopersmith Self-Esteem Inventory (CSEI) Form B (Coopersmith, 1967), the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1979), the Intellectual Achievement Responsibility Questionnaire (IAR; Crandall, Katkovsky, & Crandall, 1965), the Test Anxiety Scale for Children (TASC; Sarason, Davidson, Lighthall, & Britton, 1960), the Children's Manifest Anxiety Scale (CMAS; Castareda, McCandless, & Palermo, 1956), and the Achievement Anxiety Test (AAT; Alpert & Haber, 1960). In addition, two measures of popularity and achievement motivation based on peer observation were used.

Chiu (1997) correlated scores on the SAMRS with a variety of measures. Scores were correlated with grades of academic subjects or GPAs for 23 classes at different grade levels. Correlations ranged from 0.37 to 0.90 with a median of 0.76. SAMRS scores also were correlated with scores on standardized tests (MRT, Iowa Test of Basic Skills (ITBS), and CAT) for four classes. These correlations ranged from 0.30 to 0.75 with a median of 0.61.

SAMRS scores were correlated with SnAch scores for two 6th grade classes. These correlations were 0.31 (n=40) and 0.15 (n=45). SAMRS scores also were correlated with I+ (successful situations) and I - (failure situations) of the Intellectual Achievement Responsibility Questionnaire (IAR) for five classes. Correlations with I+ ranged from 0.04 to 0.56 with a median of 0.19, indicating that these correlations were in the right direction but of small value. Correlations with I - ranged from -0.30 to 0.33. These correlations were negligible and inconsistent.

SAMRS scores were correlated with scores on three measures of self-esteem. A group of 12 teachers rated their student's self-esteem using the SERSC, and those scores were correlated with the SAMRS scores. Most correlations were of a moderate to high degree ranging from 0.40 to 0.85 with a median of 0.73. SAMRS scores were correlated with CSEI Form B scores for five classes. Those correlations ranged from 0.13 to 0.70

with a median of 0.44. SAMRS scores also were correlated with RSES scores. Those correlations ranged from 0.17 to 0.43 with a median of 0.29. SAMRS scores were correlated with three measures of anxiety to establish scale score validity: 1) TASC for several 6th grade classes taught by two teachers, with correlations between the measures across the two teachers of -0.20 (n=34) and -0.39 (n=80); 2) CMAS for three classes, with correlations across three teachers of -0.06 (n=25), -0.59 (n=23), and -0.22 (n=38); 3) AAT for a group of 8th graders taught by one teacher, with correlations of 0.47 with the facilitating scale AAT + (n=44) and -0.37 with the debilitating scale AAT - (n=44); and 4) AAT for a group of 9th graders taught by one teacher, with negligible correlations of 0.12 for AAT + and -0.08 for AAT -.

SAMRS scores were correlated with the number of choices students received from their classmates in seat and work situations for five classes. The correlations were of low to moderate values ranging from 0.21 to 0.61 with a median of 0.37. Also, SAMRS scores also were correlated with a "guess who" measure of achievement motivation for three classes. Those correlations were 0.68, 0.74, and 0.74 for the three classes. Cronbach's alphas ranged from 0.61 to 0.90 with a median of 0.82, indicating that scale scores were internally consistent for the sample used in the study.

Test-retest reliability coefficients with a 6-to-8 week interval ranged from 0.79 to 0.98 with a median of 0.91. The high test-retest correlations suggest that the scores on the scale given by the same teachers to the same group of students on two occasions over time were consistent.

In the Medic Training 2000 (MT2K) study, internal consistency of the school motivation instrument was assessed with the first administration.

In this sample of 347 experienced combat medics, the Cronbach alpha was 0.42. Items 3, 6, 8, 11, 13, and 15 all had near zero correlation with the total score, suggesting that this instrument was measuring more than one dimension in this population.

Oddi Continual Learning Inventory (OCLI)

The OCLI is a 24-item instrument developed by Oddi in 1996 (Appendix C). It is a tool for identifying self-directed continual learners. Research indicates that the OCLI is reliable and valid (Oddi, 1986; Preczewski, 1997). The instrument was administered to a sample of 271 graduate students. The instrument demonstrated an internal consistency of 0.87 and a test-retest reliability of 0.89. Estimates of construct validity were obtained through correlation of scores with four instruments of known reliability and validity: 1) The Leisure Activity Scale (LAS) (Litchfield, 1965) with filler items removed provided a measure of the extent to which adults participate in educational activities; 2) The Internal-External Scale (I-E scale) (Rotter, 1996) provided a measure of individual differences in locus of control; 3) Four subscales of the Adjective Checklist (ACL) (Gough & Heibrun, 1983) provided measures of various personality characteristics. The Self-Confidence sub-scale (ACL-s-cfd) was selected to provide a measure of self-confidence and initiative. The Affiliation sub-scale (ACL-Aff) was selected to provide a

measure of the level of involvement with others when engaging in learning activities. The Change sub-scale (ACL-Cha) was selected to provide a measure of open-mindedness and flexibility. The Endurance sub-scale (ACL-End) was selected to provide a measure of the tendency to persist in learning; and 4) The Shipley Institute of Living Scale (Shipley, 1982) was selected to provide a measure of intelligence in order to obtain a measure of discriminate validity for the OCLI.

Scores on the OCLI correlated positively ($r = 0.363$, $p = 0.004$) with scores on the LAS. Scores also correlated positively with scores on numerous sub-scales of the ACL: ACL-s-cfd, $r= 0.552$, $p<0.001$); ACL-End, ($r=0.539$, $p<0.001$); and ACL-Aff ($r=0.265$, $p=0.04$). These positive correlations suggest convergent validity of the OCLI. A measure of discriminate validity was provided when scores on the OCLI failed to correlate significantly ($r=0.40$, $p=0.754$) with scores on the Shipley. OCLI did not correlate significantly with either the ACL-Cha scale ($r =-0.20$, $p=0.928$) or the I-E scale ($r=-.040$, $p=0.73$). The internal consistency of the OCLI was assessed with the first administration. In this study, a sample of 347 experienced combat medics, the Cronbach alpha was 0.85, indicating a high degree of reliability.

Life-Saving Skills Assessment-Cognitive Test

The test questions for IV therapy came from a Brady EMT-I textbook. The Medic Training 2000 study (MT2K) Medical Director developed the Nuclear, Biological, Chemical Warfare (NBC) casualty management questions. This assessment test was developed from the Brady's 8th Edition, EMT-B Student Workbook and Test Bank (1998) for the core life-saving skills of trauma assessment, airway management, bleeding control/shock management (Appendix D). The life-saving skills assessment was a 50-item instrument. The internal consistency was established with the first administration. In this sample of 347 experienced combat medics, the Cronbach alpha was 0.54. The relatively low coefficient was undoubtedly due to the short subscales (10 items each) and the very low scores on the NBC subscale.

Core Life-saving Hands-on Test

The core life-saving hands-on tests consisted of trauma assessment, airway management, bleeding control/shock management, and intravenous (IV) therapy. Each of these core life-saving hands-on tests had a skill sheet displaying the steps to the skill and the critical criteria. Inter-rater agreement was established on each skill prior to data collection.

Two performance core life-saving skill sheets (trauma assessment and bleeding control/shock management) were adopted from the EMT-B National Curriculum unchanged; one performance core life-saving skill sheet (airway management) was modified. The EMT-B National Curriculum had a performance skill sheet for each component of airway management. The researchers combined these components into one performance core life-saving skill sheet (see Appendix E) using the same critical criteria. The rationale for this change was the belief that combat medics might perform one

component of airway management but not know another component of airway management. This approach used by the researchers ensured that combat medics would perform each component of airway management. The last performance core life-saving skill sheet was taken from the EMT-Intermediate skill sheet. Starting an IV is not considered an EMT-B skill; however, combat medics need to know this skill and routinely perform it in the day-to day work environment. Two evaluators verified for completeness the core life-saving skill sheets.

These core life-saving skill sheets were used to record combat medic performance of these skills at every data collection visit. The core life-saving skill sheet was scored by placing a "1" in the criteria box if combat medics performed the skill step or a "0" if combat medics failed to perform the skill step. In order for combat medics to get a "1" on the skill step, they had to perform the step, not simply verbalizing how they would do the step. All the steps were then added up to render a total score. The National Registry provides a cut-off score for pass/fail of the skill.

Inter-rater reliability on life-saving skill sheets was established among graders before data collection began. Research members were trained by a subject matter expert to use the skill sheet by watching and discussing a videotape of an individual being tested on a hands-on test. An average congruency percentage (Waltz, et al., 1991) was calculated across research members. The percentage agreement among research members was 81% for the "insert the IV" skill (n=26), 88% for the "control bleeding" skill (n=31), 88% for the "manage the airway" skill (n=31), and 90% for the "assess a casualty" skill (n=26), indicating a high degree of inter-rater reliability.

Combat Medic's Direct-Line Supervisor - Phase I Questionnaire

This questionnaire was developed by the researchers to measure the current perceptions of combat medic direct-line supervisors (Appendix F). The Combat Medic Direct-Line Supervisor Questionnaire - Phase I is a 28-item instrument. The questionnaire asks about proficiency of life-saving skills, unit resources related to training, patient contact, unit train-up, valued team member, and skills related to the experienced and new combat medic. Content validity was established through analysis of a skill matrix, the 1998 Training Task Selection Board (TTSB) recommendations, and a panel of experts. The internal consistency of the instrument could not be determined because it was designed as an opinion survey (i.e., items 1 to 28) and a fact finding survey (i.e., items 29 to 50) rather than around a single theoretical construct.

Combat Medic Student Evaluation of Combat Medic Training

The questionnaire was a 145-item instrument, developed for this study to evaluate the combat medic course (Appendix P). Items were updated after forms used by Blythe et al. (1979) and currently in use. Students completed this questionnaire at the end of the combat medic course. There were several components of this instrument: course administration, hands-on activities, testing procedures, instruction, instructor behaviors, students, and physical environment of the military combat medic course. Analysis of the

232nd Medical Battalion's course evaluation forms and a panel of experts established content validity. The internal consistency of this instrument was measured with the end of course administration. In this sample of 150 combat medic students, the Cronbach alpha was 0.92, indicating a high degree of reliability.

Combat Medic Instructor Evaluation of Combat Medic Training Questionnaire

This questionnaire was a 102-item instrument, developed for this study to evaluate the combat medic course (Appendix Q). Instructors completed this questionnaire at the end of the combat medic course. There were several components of this instrument: course administration, hands-on activities, testing procedures, instruction, instructor behaviors, students, and physical environment of the combat medic course. Analysis of the 232nd Medical Battalion's course evaluation forms and a panel of experts established content validity. The internal consistency of this instrument was measured with the end of course administration. In this sample of 14 combat medic instructors, the Cronbach alpha was 0.74, indicating good reliability for a small, homogeneous sample.

Classroom Observation Checklist

The checklist was developed for this study. This yes/no observation checklist was completed by staff members during observation of classroom activities (Appendix R). The components of this checklist include classroom observation, hands-on skill observation, cognitive testing procedure, and hands-on skill testing procedure. A comment section was included to add written comments. A panel of experts and a review of the literature established content validity. Inter-rater reliability of this instrument was assessed by classroom observation with inter-rater discussion. Inter-rater reliability was good with 80% agreement.

New Combat Medic Questionnaire

This questionnaire was created for the study to assess perceptions of readiness and skill proficiency of the new combat medic (Appendix U). This questionnaire is a 24-item instrument. There are several components of this questionnaire including proficiency in life-saving skills, unit resources for training, patient contact, train-up, valued team member, and skills. Content validity was established through analysis of a skill matrix, the 1998 TTSB recommendations, and a panel of experts. The internal consistency of this instrument could not be established because it was designed as an opinion survey (i.e., items 1 to 24) and a fact-finding survey (i.e., items 25 to 48), rather than around a theoretical construct.

OVERALL RESEARCH DESIGN

Phase I: Performance and Perceptions Of The Experienced Combat Medic

Phase I was a prospective, descriptive, correlational design. It was designed to measure the experienced combat medics' knowledge and skill performance of four life-saving skills, perceptions of their performance of four life-saving skills, and perceptions of their ability to perform their medical mission. The combat medics' direct-line supervisors were canvassed regarding their perceptions of the combat medics', proficiency, barriers to sustainment training, resources available for training, and preparation to perform their medical mission.

Phase II: Experimental Model Schoolhouse

Phase II used a prospective experimental design. This educational/training study utilized a "model program" that employs teaching strategies that actively engaged students in learning and prepared them to be self-directed learners. The effectiveness of the "model program" was compared with the current combat medic program located at the 232nd Medical Battalion. The content from both courses was the same but the order of presentation of content and the teaching techniques used to deliver the content were different. The experimental "model program" and its curriculum were reviewed and approved by the Dean of the Academy of Health Sciences (AHS), Academic Standards Branch of the AHS, and the Commander, 232nd Medical Battalion.

Phase III: Sustainment Training Package & Medical Field Readiness Index (MFRI)

A prospective experimental design with repeated measures was utilized during this phase of the study. Experienced and new combat medics at Fort Hood, TX used a researcher-designed, stand-alone, multi-sensory, unit sustainment-training package. Experienced and new combat medics at Fort Carson, CO; Fort Bragg, NC; and Fort Lewis, WA received the usual medic training implemented at these installations.

A test-retest validation design was used to evaluate the MFRI. The object of this portion of the study was to develop and pilot test the MFRI. This instrument could be used to document individual combat medic and unit readiness. Currently combat medics performance is not reportable on the Unit Status Report (USR).

Study Sites

For Phases I & III, the four study sites were Fort Carson, CO, Fort Bragg, NC, Fort Hood, TX, and Fort Lewis, WA. These four sites were chosen based on the following criteria: (1) PERSCOM assigned the greatest number of combat medics within the Continental United States to these Army posts; (2) these four sites had combat support hospitals, or fixed hospitals, or both; (3) these sites represented the combat structure of light infantry, heavy mechanized, and airborne units; (4) key personnel at these sites were interested in the study and helped coordinate in data collection.

Data Collection

This study was conducted in accordance with the guidelines of AR 40-38 and falls under the exemptions associated with military education and training studies. Questionnaires did not ask about sensitive issues. Prior to data collection at the four sites, a briefing about the Medic Training 2000 Study was given to the Surgeon General of the Army the FORSCOM Surgeon, The Corps Surgeons and their representatives, and Commanders and task elements of the AMEDD Center & School. Following the briefing, a FORSCOM tasking for the TOE units and a MEDCOM tasking to the hospitals were sent to each of the four sites. At each study site there was a Corps Surgeon, a Corps Sergeant Major, and an NCO coordinator to manage the study's activities. The MT2K Project Manager and study Non-commissioned Officer in charge (NCOIC) coordinated study activities through these key personnel.

All information obtained from the participants was held in strict confidence to protect the participant's anonymity. The researchers collected the name, social security number, and unit of each participant in order to track the soldier over time. Data with these identifiers were treated For Official Use Only Documents. Data was reported in aggregate form only.

The policies and procedures for treating students and handling academic issues were addressed in the Student Evaluation Plan (SEP) for the experimental group (Appendix N) and the control group (Appendix O).

PHASE I: PERFORMANCE AND PERCEPTIONS OF THE EXPERIENCED COMBAT MEDIC

Design

Phase I was a prospective, descriptive, correlational design. It was designed to measure experienced combat medics' knowledge and skill performance of four core life-saving skills, perceptions of their performance of these four core life-saving skills, and perceptions of their ability to perform their medical mission. The combat medics' direct-line supervisors were also canvassed regarding their perceptions of combat medic proficiency, barriers to sustainment training, resources available for training, and preparation to perform their medical mission.

Sample

An experienced combat medic was defined as having a minimum of one year of experience since graduating from the combat medic course. The experienced combat medic sample was recruited on the basis of population parameters from each study site. Each site's Corps Sergeant Major asked key units at the installation to select experienced 91B10 combat medics to participate in the study. The selection process was based on the study sample criteria, unit deployment issues related to four and six month follow-ups, and Permanent Change of Station (PCS) status issues.

At the initiation of Phase I army wide, there were approximately 5269 combat medics in Health Services Support Level I and II, 997 combat medics in Health Services Support Level III and 1339 in Level IV (MODS, 1997). (see Table 1)

Table 1. Distribution of Army Combat Medics

Number of Medics	Health Services Support Level (FM 8-10-6)
5269	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company)
997	Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs)
1339	Level IV (MEDDACs & MEDCENs)

BN = Battalion,
MASH = Mobile Army Surgical Hospital
CSH = Combat Support Hospital
MEDDAC = Medical Department of Army Community Center
MEDCEN = Medical Center

The number of eligible 91B10 combat medics and supervisors that were at each study site is shown in Table 2.

Table 2. Eligible Population of Subjects at the Four Study Sites

Study Site	Number of Experienced Medics	Health Services Support Levels
Fort Carson, CO	121	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDDAC)
Fort Bragg, NC	125	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDCEN)
Fort Hood, TX	340	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDDAC)
Fort Lewis, WA	106	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDCEN)
Study Site	**Physician Assistants**	**Non-Commissioned Officers (NCO)**
Fort Carson, CO	5	46
Fort Bragg, NC	16	40
Fort Hood, TX	14	81
Fort Lewis, WA	6	36

BN = Battalion,
MASH = Mobile Army Surgical Hospital
CSH = Combat Support Hospital
MEDDAC = Medical Department of Army Community Center
MEDCEN = Medical Center

The eligible population of experienced combat medic and direct-line supervisors was adjusted to consider factors such as deployment, PCS, temporary duty (TDY), and personal, emergency, and convalescent leave. The number of 91B10 combat medics and direct-line supervisors that were available at each site are shown in Table 3.

Table 3. Revised Available Population of Subjects at the Four Study Sites

Study Site	Experienced Medics	Health Services Support Levels
Fort Carson, CO	76	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDDAC)
Fort Bragg, NC	77	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDCEN)
Fort Hood, TX	120	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDDAC)
Fort Lewis, WA	74	Level I & II (Medical Platoons, Forward Support Medical Company, Main Support Company) Level III (Area Support Medical Company, Forward Surgical Teams, Evacuation BN ground & air, MASHs, CSHs) Level IV (MEDCEN)
Study Site	**Physician Assistants**	**Non-Commissioned Officers (NCO)**
Fort Carson, CO	5	46
Fort Bragg, NC	16	40
Fort Hood, TX	14	81
Fort Lewis, WA	6	36

BN = Battalion,
MASH = Mobile Army Surgical Hospital
CSH = Combat Support Hospital
MEDDAC = Medical Department of Army Community Center
MEDCEN = Medical Center

A final sample size was calculated to minimize sampling error (< 4% margin of error) for the perception surveys and to maximize power for key analyses of variance (power > 0.80 when alpha = 0.05 and effect size < 0.50 standard deviations).

Data Collection

Experienced combat medics completed a variety of self-report, objective, and analytical measures in the form of questionnaires. In addition, each experienced combat medic performed four core life-saving skills [trauma assessment, airway management, intravenous therapy, and bleeding control/shock management] (see Table 4 here and Appendix E). These tests were used to evaluate the current performance level of experienced combat medics.

Table 4. Four Core Life-saving Skills

Core Skills	Essential Medic Tasks to Save a Life
Trauma Assessment	Physical examination of combat medic casualty
Bleeding Control/Shock Management	Apply pressure, use tourniquet, dressing, bandaging, splinting, position of patient
Airway Management	Manual methods, oxygen therapy, suctioning, artificial ventilation (bag-valve mask)
IV Therapy	Start intravenous infusion, administer IV fluids

Combat medics need to be able to perform a trauma assessment on a casualty. History assessment establishes information about the nature of the injury, along with safety of the environment. Physical examination is a rapid head-to-toe assessment of body systems to determine extent of injuries and initial treatment parameters.

Airway management is critical to keep the casualty alive. Without adequate oxygenation, body systems fail and the casualty dies. Combat medics performance of manual airway methods, oxygen therapy, suctioning, and artificial ventilation (bag-valve-mask) are essential skills to save a life.

During battle, control of bleeding/shock management is a core life-saving skill. If bleeding is not controlled, shock and death can occur. Combat medics use skills such as direct pressure, use of tourniquets, positioning, bandaging, and splinting to control bleeding.

Intravenous catheter placement is important to administer fluids and treat shock. Unlike civilian EMT-Bs, Combat medics need to provide intravenous therapy to fulfill the combat medic mission on the battlefield.

All skills were performed on mannequins and simulated equipment. The questionnaires were completed and skill performance was assessed at that time. The approximate time for completion of these tasks was two hours. (see Table 5)

Table 5. Phase I -- Summary of Measurements

Respondent	**Instrument**	**Administration Time**
Experienced combat medics	(a) Experienced Combat Medic Questionnaire (b) Assessment Core Life-saving Skills - Cognitive test (c) Self-Directed Continual Learning Inventory (Oddi, 1986) (d) School Achievement-Motivation Survey (Chiu, 1977) Performance Skill Sheets of Four Core Life-Saving Skills	30 minutes 30 minutes 10 minutes 10 minutes 40 minutes
Direct Line combat medic supervisors (i.e., physician assistant, 91B20, emergency department ward master)	Direct Line Supervisor Questionnaire (Phase I)	40 minutes

Prior to combat medics arriving at the testing site, they were briefly given information on the study and asked to participate by their unit supervisor. The experienced combat medics were then released from their unit during Sergeants' Time. At the testing site, researchers gave an extensive brief. Experienced combat medics (n= 347) were given surveys to assess perceptions of combat medics' performance of core life-saving skills and medic training (Appendix A), school achievement motivation (Chiu, 1997; Appendix B), self-directed learning efforts (Oddi, 1986; Appendix C), and knowledge underlying core life-saving skills (Table1).

A total of 14 evaluators collected data during Phase I and III. The co-investigator was the only evaluator to make all data collection trips and the project manager made all but one trip in an attempt to provide continuity of evaluators. The other evaluators rotated trips. Prior to data collection at each site, the co-investigator reviewed the skill criteria, skill scenarios, and evaluator's script with all evaluators. The review of skill criteria and rating of skills was based on the EMT-Basic Practical Examination Users Guide (1994).

At every data collection site, the station set-up was consistent. Any deviation in set-up was corrected at the time of discovery. For example, at the intravenous (IV) station the combat medic had a mannequin IV arm, a medic aid bag that contained the supplies necessary for starting an IV, and an IV pole (Appendix G). Consideration was given to combat medic privacy, lighting, room temperature, and sound. On two site visits to Fort Hood, TX, stations were partitioned off. Otherwise, private rooms were available for each skill station. Combat medics had tables and chairs or clipboards and chairs to complete the surveys.

Each core life-saving skill had the same scenario for each data collection episode (Appendix H). This scenario gave the participant a particular patient situation that directed him to act and perform the life-saving skill. For example, one scenario card told the medic that the patient had lost a lot of blood and needed fluids. The combat medic was then required to start an Introvenous (IV) on the mannequin IV arm.

Each evaluator had the same script to follow for every combat medic tested. This script consisted of informing combat medics of the 10-minute time limit to perform the skill, asking them if they had questions about the scenario, telling them that there would be no evaluator feedback at the end of the combat medics' performance, and explaining to them clean-up procedure following the skill. The evaluator did not verbally cue combat medics unless the criteria stated the evaluator must tell them something. If cueing was required, the evaluator read what was directed on the skill criteria sheet. Evaluators would interrupt, if real time safety were an issue (i.e., oxygen tank and needle safety). All the life-saving skill sheets had steps (criteria) to follow plus each skill had critical criteria marked.

Two evaluators verified the data on the combat medic surveys. This procedure was followed in order to validate completeness of the survey. Once this verification process was complete, the co-investigator coded these sheets for data entry. (See Core Life-saving Hands-on Test above)

A second purpose of Phase I was to canvas the combat medics and their direct-line supervisor regarding barriers to sustainment training, resources available for sustainment training, and the perceived preparation of experienced combat medics to perform in a combat mission. Direct-line supervisors were mailed a letter explaining the study and asking them to complete the Combat Medic Direct-Line Supervisor Questionnaire (Appendix F). The direct-line combat medic supervisors (i.e., physician assistants, 91B20 medic, Emergency Department (ED) NCOICs, etc.) completed their questionnaires and mailed them back to the researchers. No identifiers were requested from these supervisors.

Quantitative Results of Phase I

<u>Experienced Combat Medics</u>

Sampling Error: Was the final Phase I sample of experienced combat medics representative of the four installations? The 1997 Military Occupation Data System (MODS) was used to determine the number of combat medics (pay grades E2 to E4) assigned to each of the four installations chosen for study. Table 6 shows the final sample size of experienced medics as a function of the target population. Note that the final sample (Total) was equivalent in size to 50% of the medics normally expected to be available at these four installations (i.e., not deployed, on leave, out-processing, etc.). A sample of this size should provide a statistically reliable sample. That is, given a finite population of 2038 combat medics, a sample of 347 combat medics provides survey

results with a maximum 4% margin of error (α=0.05 and p/f $\leq$ 0.80/0.20). For example, at these four installations the population of combat medics was 67% male and 33% female (MODS, 1997). The sample for this study was 68% male and 32% female. Clearly, the sample was well within the 4% margin of error.

Table 6: Experienced Combat Medic Sample Size

Installation	Assigned Personnel	Personnel Estimated to be Available	Personnel Obtained in Sample	Sampling Rate
Fort Bragg	368	125	71	57%
Fort Carson	357	121	76	63%
Fort Hood	1001	340	127	37%
Fort Lewis	312	106	73	69%
Total	2038	692	347	50%

Demographics: What was the demographic composition of the final Phase I sample of experienced combat medics? Table 7 shows the distribution of responses to the demographic questions posed to experienced combat medics (see Appendix A). As would be expected, given the sampling method, these data clearly show the diversity of the sample and the way in which it reflects the population of experienced combat medics.

Table 7: Demographics of Phase I Sample of Experienced Combat Medics (n=347)

Variable	% of Sample	Variable	% of Sample
Total Military Medical Experience		**Age**	
less than 1 year	27%	18 to 20	32%
1 to 5 years	47%	21 to 25	49%
6 to 9 years	10%	26 to 36	18%
10 or more years	1%	37 to 46	0%
missing	15%	missing	3%
Total Experience in TOE		**Gender**	
less than 1 year	40%	male	68%
1 to 5 years	55%	female	32%
6 to 9 years	2%	missing	0%
10 or more years	1%		
missing	2%		
Total Experience in TDA		**Ethnicity**	
less than 1 year	74%	Caucasian-American	49%
1 to 5 years	13%	African-American	22%
6 to 9 years	<1%	Hispanic-American	14%
10 or more years	<1%	Other	14%
missing	13%	missing	2%
Current Assignment		**Civilian Educational Level**	
TOE	87%	High School	44%
TDA	13%	Some College, no degree	40%
missing	<1%	Some College, license	7%
Rank		Associate's degree	6%
E2 to E4	99%	Undergraduate degree	3%
E5 to E7	0%	Advanced degree	<1%
E8 to E9	0%	missing	1%
O1 to O3	0%		
missing	1%		

TOE = Table of Organizational Equipment
TDA = Table of Distribution and Allowances

Performance: How well did experienced combat medics do on the hands-on core life-saving skill tests? Experienced combat medics were administered hands-on tests of their ability to perform four core life-saving skills (Appendix E). A detailed breakdown of the responses to the hands-on tests is available upon request. Each hands-on test consisted of 12 to 40 subtasks. Performance on each subtask was scored Pass or Fail. Each subtask was coded as critical criterion or not. Each combat medic received two scores: (1) a simple score representing the percentage of subtasks passed, and (2) a critical criteria score representing the percentage of subtasks and the percentage of critical criteria passed. Table 8 provides the breakdown of performance by skill area. These data indicate that performance was inadequate. Less than two-thirds of the group could pass three of the four skills tested. Only a few combat medics could pass a hands-on test when they were judged according to a critical criteria standard like that used by the National Registry of Emergency Medical Technicians.

Table 8: Performance on Hands-on Tests of Core Life-saving Skills

Core Life-saving Skills	Mean Score (% correct) $\pm$ Standard Deviation	Combat Medics Scoring 70% or higher (n = 347)	Combat Medics Passing Critical Criteria Standard (n = 347)
Assess Casualty	47 $\pm$21	17%	3%
Manage Airway	68 $\pm$17	51%	1%
Control Bleeding	59 $\pm$13	20%	8%
Insert IV	79 $\pm$11	76%	29%

Performance: How well did experienced combat medics do on a cognitive test of five life-saving skills? Experienced combat medics were given a 50-item multiple-choice test. The exam tested five life-saving skills [ten items on each skill] (Appendix D). A detailed breakdown of the responses to the test is available upon request. Scores on the test ranged from a low of 20% to a high of 84%. A score of 70% correct was considered passing. Table 9 provides the breakdown of performance by skill area. These data clearly show that performance was inadequate. Less than two-thirds of the group could pass three of the five skills tested.

Table 9: Performance on a Cognitive Test of Life-saving Skills

Life-saving Skills	Mean Score (% correct) $\pm$ Standard Deviation	Combat Medics Scoring 70% or higher (n = 347)
Assess Casualty	64 $\pm$13	50%
Manage Airway	70 $\pm$13	66%
Control Bleeding	66 $\pm$16	55%
Insert IV	80 $\pm$12	89%
Treat NBC Casualty	49 $\pm$16	16%
Total Score	66 $\pm$ 8	34%

Comparison of Cognitive Test to Hands-on Test Performance of Core Life-saving Skills: Was the experienced combat medic's performance on the cognitive test a good estimate of his/her performance on the hands-on tests? A matrix of bivariate correlations between percentage correct scores on the cognitive test (total and subtest scores) and percentage correct scores on the hands-on tests was calculated. Correlations ranged from 0.00 to 0.39, indicating that performance on the cognitive test did not predict performance on the hands-on tests of core life-saving skills.

Predictors of Proficiency: Were there personal or organizational factors that predicted performance on the hands-on or cognitive tests? A dozen variables were evaluated for their ability to predict the test performance of experienced combat medics (where test performance was defined as percentage correct scores on the six cognitive tests, total and five subtest scores, and the four hands-on tests of core life-saving skills).

(1) Age. The bivariate correlations between age and percentage correct scores on the ten performance tests were calculated. Correlations ranged from 0.00 to 0.20, indicating that age did not predict test performance.

(2) Rank. The bivariate correlations between rank (E2, E3, or E4) and percentage correct scores on the ten performance tests were calculated. Correlations ranged from 0.04 to 0.24, indicating that rank did not predict test performance in a straightforward linear manner. The variable "rank" can be viewed as categorical data. Therefore, additional analysis was done, in order to determine whether rank might have a simpler relationship to performance. Separate one-way ANOVAs were used to evaluate differences among experienced combat medics on each of the ten performance tests as a function of rank. Table 10 summarizes the results of the ANOVA tests. The highest-ranking experienced combat medics (E4) consistently scored higher than lower ranking combat medics (E2 and E3). The difference was statistically significant for all four of the hands-on performance tests.

Table 10: Comparison by Rank - Mean Scores (Percent Correct) Of Experienced Combat Medics On Tests of Life-saving Skills

Military Rank	E2 (n = 33)	E3 (n = 166)	E4 (n = 145)		
Tests	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**F (2, 341)**	**p**
Cognitive Test					
Assess Casualty	63 ±15	63 ±14	65 ±12	1.59	*
Manage Airway	70 ±12	69 ±13	70 ±13	0.77	*
Control Bleeding	64 ±15	65 ±17	68 ±14	1.88	*
Insert IV	78 ±13	79 ±13	82 ±10	3.38	0.04
Treat NBC Casualty	46 ±15	47 ±15	51 ±17	2.44	*
Total	64 ± 8	64 ± 9	67 ± 7	5.43	0.01
Hands-on Tests					
Assess Casualty	37 ±20	45 ±21	52 ±21	9.44	0.0001
Manage Airway	60 ±20	66 ±16	72 ±15	10.39	0.0001
Control Bleeding	56 ±15	57 ±13	62 ±13	4.76	0.01
Insert IV	74 ± 12	78 ±11	82 ±10	10.22	0.0001

*not significant, > 0.05, SD = Standard Deviation

(3) Educational Level. The bivariate correlations between educational level and percentage correct scores on the ten performance tests were calculated. Correlations ranged from -0.03 to 0.15, indicating that educational level did not predict test performance in a straightforward linear manner. The variable "education" was viewed as categorical data. Additional analysis was done in order to determine whether education might have relationship to performance. Experienced combat medics with education were divided into three groups on the basis of their educational level: (1) high school graduate, (2) some college, or (3) college graduates (holders of associate degrees, bachelor degrees, or advanced degrees). Separate one-way ANOVAs were used to evaluate differences among them on each of the ten performance tests as a function of levels of education. Table 11 summarizes the results of the ANOVA tests. Experienced combat medics with college experience or a college degree consistently scored higher than those with only a high school education. However, the difference was statistically significant for only two of the five cognitive tests.

Table 11: Comparison by Educational Level - Mean Scores (Percent Correct) Of Experienced Combat Medics On Tests Of Life-saving Skills

Education Level	High School (n = 151)	Some College (n = 138)	College Degree (n = 55)		
Tests	**Mean ± SD**	**Mean ± SD**	**Mean ± SD**	**F (2, 341)**	**P**
Cognitive Test					
Assess Casualty	63 ±14	64 ±13	64 ±13	0.12	*
Manage Airway	69 ±14	70 ±13	72 ±11	1.46	*
Control Bleeding	64 ±16	67 ±16	70 ±15	4.00	0.02
Insert IV	79 ±12	81 ±13	81 ±12	0.98	*
Treat NBC Casualty	46 ±14	50 ±17	53 ±17	3.46	0.03
Total	64 ± 7	66 ± 9	68 ± 7	4.88	0.01
Hands-on Tests					
Assess Casualty	45 ±20	48 ±23	52 ±20	2.07	*
Manage Airway	68 ±16	69 ±17	67 ±18	0.23	*
Control Bleeding	58 ±14	60 ±14	60 ±10	1.11	*
Insert IV	78 ± 11	81 ±10	80 ±11	2.65	*

*not significant, > 0.05

(4) School Motivation. On the day of performance testing, each experienced combat medic was also administered a test of school motivation (Appendix B). Scores ranged from 42 to 74 (out of a possible range of 15 to 75), with a mean of 58.50 ± 6.37 SD. The bivariate correlations between school motivation and percentage correct scores on the ten performance tests were calculated. Correlations ranged from 0.00 to 0.18, indicating that school motivation did not predict test performance.

(5) Self-directed Learning. On the day of performance testing, each experienced combat medic was also administered a test of self-directed learning (Appendix C). A detailed breakdown of the responses to the OCLI questionnaire is available upon request. Scores ranged from 39 to 160 (out of a possible range of 24 to 168), with a mean of 122.80 ± 20.76 SD. The bivariate correlations between self-directed learning and

percentage correct scores on the ten performance tests were calculated. Correlations ranged from -0.02 to 0.12, indicating that self-directed learning did not predict test performance.

(6) Perceptions of Proficiency. Item 1 of the Experienced 91B10 Medic questionnaire (see Appendix A) asked the medic to rate "your proficiency in performing [the] skills listed below." Table 12 shows the distribution of their responses to this item. The majority of experienced combat medics rated themselves as completely proficient on only two of the five skills. Only 6% of them rated themselves as proficient in treating NBC casualties. However, a comparison of Table 12 with Tables 8 and 9 illustrates that substantially more of the experienced combat medics rated themselves as needing minimal or no assistance than could actually pass the tests.

Table 12: Experienced Combat Medics' Ratings of their Proficiency On Life-saving Skills (n=347)

Life-saving Skills	Missing	Unable to Perform	Perform with Continuous Assistance	Perform with Moderate Assistance	Perform with Minimal Assistance	Perform with No Assistance
Assess Casualty	5%	<1%	8%	22%	38%	27%
Manage Airway	5%	1%	2%	12%	33%	47%
Control Bleeding	4%	1%	1%	7%	19%	68%
Insert IV	4%	1%	2%	4%	17%	72%
Treat NBC Casualty	4%	6%	27%	39%	18%	6%

The bivariate correlations between the self-rating and the percentage correct scores on the ten performance tests were calculated. Correlations ranged from -0.10 to 0.25, indicating that self-rating did not predict test performance in a straightforward linear manner. Additional analysis was done after collapsing the five self-rating categories into three groups: (1) requiring assistance (self-rating of 1, 2, or 3), (2) requiring minimal assistance (self-rating of 4), or (3) requiring no assistance (self-rating of 5). Separate one-way ANOVAs were used to evaluate differences among them on the performance tests as a function of self-rating score. For example in the first of these ANOVAs (see Table 13), their ratings of their proficiency in assessing a casualty were used to divide them into three groups. Differences among these three groups in actual performance on the written test of assessing casualties were then evaluated using an ANOVA. Table 13 summarizes the results of all the ANOVA tests. Combat medics who perceived themselves to be proficient were consistently more proficient than those who did not. These differences were statistically significant on all four of the hands-on tests of core life-saving skills. These data are an indication that although as a group experienced combat medics consistently overestimated their proficiency, their self-assessments were systematically linked to their actual skill levels.

Table 13: Comparison by Level of Perceived Proficiency – Mean Scores (Percent Correct) of Experienced Combat Medics On Tests Of Life-saving Skills

Life-saving Skills		Require Assistance	Require Minimal Assistance	Require No Assistance		
		Mean ±SD (n)	Mean ±SD (n)	Mean ±SD (n)	F (2, 344)	p
Survey Item	**Cognitive Test**					
Assess Casualty	Assess Casualty	63 ±13 (119)	64 ±12 (132)	65 ±15 (95)	0.80	*
Manage Airway	Manage Airway	68 ±13 (68)	70 ±16 (116)	70 ±13 (163)	0.47	*
Control Bleeding	Control Bleeding	67 ±16 (43)	60 ±17 (67)	67 ±15 (237)	4.85	0.01
Insert IV	Insert IV	81 ±12 (38)	78 ±12 (60)	80 ±12 (249)	0.69	*
Treat NBC Casualty	Treat NBC Casualty	48 ±16 (263)	48 ±15 (64)	55 ±16 (20)	1.44	*
Survey Item	**Hands-on Tests**					
Assess Casualty	Assess Casualty	44 ±21 (119)	46 ±21 (132)	52 ±21 (95)	4.27	0.01
Manage Airway	Manage Airway	62 ±17 (68)	67 ±16 (116)	71 ±16 (163)	7.37	0.001
Control Bleeding	Control Bleeding	56 ±12 (43)	56 ±15 (67)	61 ±13 (237)	4.90	0.01
Insert IV	Insert IV	76 ± 12 (38)	76 ±11 (60)	81 ±10 (249)	7.23	0.001

*not significant, > 0.05

(7) TOE Experience. Of the 347 experienced combat medics tested, 339 provided information about the length of their experience working in TOE units. Experience ranged from less than one year to ten or more years. The bivariate correlations between years of experience working in TOE units and percentage correct scores on the ten performance tests were calculated. Correlations ranged from 0.00 to 0.22, indicating that length of TOE experience did not predict test performance. However, 40% of those responding had less than one year of experience in a TOE unit, limiting the usefulness of the correlation statistic. Separate one-way ANOVAs were used to compare the test performance of experienced combat medics with less than one year of TOE experience to those with one or more years of TOE experience on each of the ten performance tests. Table 14 summarizes the results of the ANOVA tests. There were no significant differences between the two experience groups on the cognitive test or its subtests, but there were significant differences on each of the core life-saving hands-on tests. Experienced combat medics with less than one year of TOE experience scored significantly lower on all four of the hands-on tests of core life-saving skills than did those with more than one year of TOE experience.

Table 14: Comparison by Levels of TOE Experience -Mean Scores (Percent Correct) of Experienced Combat Medics on Tests of Life-saving Skills

Experience	Less than 1 year experience (n = 137)	1 or more years experience (n = 202)		
Tests	**Mean ± SD**	**Mean ± SD**	**F (1, 337)**	**P**
Cognitive Test				
Assess Casualty	62 ±15	65 ± 12	2.39	*
Manage Airway	69 ±12	69 ± 14	0.21	*
Control Bleeding	64 ±16	67 ± 15	2.12	*
Insert IV	79 ±13	80 ± 11	0.58	*
Treat NBC Casualty	46 ±14	50 ± 16	3.28	*
Total	64 ± 8	66 ± 8	3.35	*
Hands-on Tests				
Assess Casualty	76 ±12	81 ± 10	14.94	< 0.001
Manage Airway	57 ±15	60 ± 12	8.21	0.004
Control Bleeding	42 ±21	51 ± 20	4.75	0.03
Insert IV	65 ±17	70 ± 16	19.79	< 0.001

*not significant, > 0.05

(8) TDA experience. Of the 347 experienced combat medics tested, 302 provided information about the length of their experience working in TDA units. Experience ranged from less than one year to ten or more years. The bivariate correlations between years of experience working in TDA units and percentage correct scores on the ten performance tests were calculated. Correlations ranged from 0.02 to 0.15, indicating that length of TDA experience did not predict test performance. However, 74% of those responding had less than one year of experience in a TDA unit, limiting the usefulness of the correlation statistic. Separate one-way ANOVAs were used to compare experienced combat medics with less than one year of TDA experience to those with one or more years of TDA experience on each of the ten performance tests. Table 15 summarizes the results of the ANOVA tests. There was a significant difference between the two experience groups on only one cognitive test/subtest. Experienced combat medics with less than one year of TDA experience scored significantly lower on the written test than experienced combat medics with more than one year of TDA experience. There were no significant differences between groups on any of the core life-saving hands-on tests.

Table 15: Comparison by Levels of TDA Experience - Mean Scores (Percent Correct) of Experienced Combat Medics on Tests of Life-saving Skills

Tests	Less than 1 year experience (n = 256)	1 or more years experience (n = 46)		
	Mean ± SD	Mean ± SD	F (1, 300)	P
Cognitive Test				
Assess Casualty	64 ± 14	64 ± 11	0.05	*
Manage Airway	69 ± 13	72 ± 13	1.23	*
Control Bleeding	65 ± 16	67 ± 14	0.41	*
Insert IV	79 ± 12	85 ± 10	9.68	0.002
Treat NBC Casualty	49 ± 16	51 ± 16	0.55	*
Total	65 ± 8	68 ± 7	3.47	*
Hands-on Tests				
Assess Casualty	47 ± 21	50 ± 22	0.80	*
Manage Airway	68 ± 17	70 ± 14	0.58	*
Control Bleeding	59 ± 14	61 ± 13	0.57	*
Insert IV	79 ±11	81 ± 11	0.91	*

*not significant, > 0.05

(9) Training Frequency. Item 8 of the Experienced 91B10 Medic Questionnaire (see Appendix A) asked experienced combat medics to indicate the amount of training on core life-saving skills that they had received in the last year. Almost a third of the medics reported having had no training within the last year (13%) or only one training session (17%). Almost a third received quarterly training (31%). Over a quarter of the sample received monthly training (27%) and a surprising 10% of the sample received weekly training on core life-saving skills. The bivariate correlations between training frequency and percentage correct scores on the ten performance tests were calculated. Correlations ranged from -0.02 to 0.16, indicating that frequency of training did not predict test performance in a straightforward linear manner. Also, separate one-way ANOVAs were used to compare experienced combat medics, each of the ten performance tests as a function of levels of training frequency. As shown in Table 16, those who got monthly or weekly training did not consistently perform better than those who got less frequent training. These data suggest that *frequency* of training is not the key to improving performance. The quality of training was not assessed. Perhaps some of those getting frequent training were getting poor quality training, while some of those getting infrequent training were getting high quality training. Such differences would tend to equate the performance of *groups*. Similarly, timing of training was not assessed. Perhaps those who reported receiving only annual or quarterly training actually received it in the days or weeks immediately preceding the testing, thus, they were able to perform as well as those who received monthly or weekly training. That is, perhaps most of the them had received *recent* training and so performed similarly. Furthermore, it may not be training, per se, that is needed, but practice. If those getting frequent training did not actually practice their skills, then performance across groups might be similar.

Table 16: Comparison by Levels of Training Frequency - Mean Scores (Percent Correct) of Experienced Combat Medics on Tests of Life-saving Skills

Level of Training	No Training (n = 45)	Annual Training (n = 59)	Quarterly Training (n = 109)	Monthly Training (n = 93)	Weekly Training (n = 36)		
Tests	**Mean ±SD**	**Mean ±SD**	**Mean ±SD**	**Mean ±SD**	**Mean ±SD**	**F (4, 347)**	**p**
Cognitive Test							
Assess Casualty	64±15	65±13	64±12	63±14	66±15	0.43	*
Manage Airway	67±15	70±13	71±12	69±14	70±13	0.62	*
Control Bleeding	61±19	66±13	66±16	68±15	66±16	1.51	*
Insert IV	79±16	80±10	81±11	80±13	79±13	0.27	*
Treat NBC Casualty	43±15	50±15	49±15	49±17	52±15	1.93	*
Total	63±11	66± 7	66± 8	66± 8	67± 9	1.37	*
Hands-on							
Assess Casualty	38±23	49±20	47±22	49±19	53±24	0.79	*
Manage Airway	62±22	72±14	67±16	69±15	70±18	1.60	*
Control Bleeding	56±12	59±17	60±12	58±14	62±12	3.13	< 0.02
Insert IV	79±10	79±11	78±11	81±10	80±11	2.59	< 0.04

*not significant, > 0.05

(10) Patient Interaction Frequency. Item 12 of the Experienced 91B10 Medic Questionnaire (see Appendix A) asked experienced combat medics to indicate the amount of interaction they had with patients in the last year. The bivariate correlations between amount of patient interaction and percentage correct scores on the ten performance tests were calculated. Correlations ranged from -0.10 to 0.11, indicating that the amount of patient interaction did not predict test performance in a straightforward linear manner. Additional separate one-way ANOVAs were used to compare experienced combat medics, each of the ten performance tests as a function of levels of patient interaction. Table 17 summarizes the results of these ANOVAs. Experienced combat medics who got more than 30 days a year of patient interaction did not perform significantly better than those who got fewer. These data suggest that *frequent* patient interaction is not the key to improving performance. It is more likely that the nature of the work done when interacting with patients is the key, that whether or not medics actually used their basic life-saving skills.

Table 17: Comparison by Levels of Patient Interaction - Mean Scores (Percent Correct) of Experienced Combat Medics on Tests of Life-saving Skills

Tests	0 to 5 days (n = 65)	6 to 14 days (n = 19)	15 to 30 days (n = 20)	31 to 90 days (n = 26)	More than 90 days (n = 74)		
	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	F (4, 199)	p
Cognitive Test							
Assess Casualty	62±15	64±13	63± 9	64±13	66±12	0.52	*
Manage Airway	69±15	70±13	71±12	69±12	70±13	0.16	*
Control Bleeding	64±18	66±11	60±20	64±19	69±17	1.42	*
Insert IV	77±15	78±10	73±15	83± 7	79±12	1.90	*
Treat NBC Casualty	50±18	51±17	42±15	50±15	50±15	1.06	*
Total	64±10	66± 6	62± 8	66± 8	67± 8	1.54	*
Hands-on Tests							
Assess Casualty	48±19	52±24	41±22	44±23	50±22	1.63	*
Manage Airway	70±15	66±24	62±20	68±13	67±18	1.13	*
Control Bleeding	62±13	56±10	57±11	59±13	60±13	1.00	*
Insert IV	82± 9	78±10	77±11	81± 8	79±12	0.88	*

*not significant, > 0.05

(11) Installation of Assignment. Installations in the study had different kinds of missions, operational tempos, and training programs. Data were analyzed to determine whether performance was generally better at one installation or another. Separate one-way ANOVAs were used to compare the test scores of experienced combat medics across the four installations for each of the ten performance tests (Table 18). Although installations were significantly different on several of the performance tests, no installation was consistently better than all the others, nor did any installation have consistently adequate performance (mean scores above passing). Significant differences among posts were usually the result of one or two posts having a significantly lower mean than one other. For example, Fort Bragg's mean score on the "assess the casualty" written test was 0.5 SD higher than Fort Lewis's, but was only 0.2 SD higher than Fort Carson's or Fort Hood's. These data support an emerging pattern of evidence which suggests that sustainment training in the field was not of sufficient quality to support medical readiness. Also, this problem was the result of a complex set of organizational factors, which affected many installations rather than a single simple personnel or training deficiency.

Table 18: Comparison by Installation - Mean Scores (Percent Correct) of Experienced Combat Medics on Tests of Life-saving Skills

Installation	Fort Bragg (n = 71)	Fort Carson (n = 73)	Fort Hood (n = 127)	Fort Lewis (n = 73)		
Tests	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	F (3, 343)	P
Cognitive Test						
Assess Casualty	67 ±12	65 ±12	64 ±13	60 ±16	3.67	0.01
Manage Airway	71 ±13	68 ±14	70 ±13	68 ±14	0.79	*
Control Bleeding	67 ±16	68 ±14	65 ±15	64 ±18	1.34	*
Insert IV	81 ±11	79 ±11	82 ±11	77 ±15	3.55	0.01
Treat NBC Casualty	51 ±15	49 ±16	49 ±15	45 ±18	1.90	*
Total	67 ± 7	66 ± 7	66 ± 8	63 ±10	4.45	0.004
Hands-on Tests						
Assess Casualty	50 ±22	55 ±14	45 ±22	42 ±23	5.49	0.001
Manage Airway	67 ±16	70 ±13	73 ±15	59 ±19	12.75	< 0.001
Control Bleeding	65 ±11	59 ±13	57 ±12	57 ±16	6.55	< 0.001
Insert IV	83 ± 9	80 ±11	79 ±11	76 ±10	4.87	< 0.01

*not significant, > 0.05

(12) Unit of Assignment. All the medic training they receive in their careers influences the test performance of experienced combat medics. However, the most recent training, training in their current unit of assignment, may well have the most impact on current performance. Units in the study had different kinds of missions, operational tempos, and training programs. Items 30 through 34 of the Experienced 91B10 Medic Questionnaire (see Appendix A) identified experienced combat medics by their current units. These data were used in an attempt to determine whether performance was generally better at one unit or another. However, the experienced combat medics in this sample, like all 91B10 medics were clustered in the Support Battalions and Medic Sections of TOE units. This fact led to large disparities in group sizes (ranging from n = 5 to n =146), which prevented any meaningful analysis of the differences between combat medics currently assigned to (a) different units (Item 30), (b) different types of TOE units (Item 31), (c) different types of TOE positions (Item 32), (d) different types of TDA units (Item 33), or (e) different types of TDA positions (Item 34). There was not enough diversity in assignments of experienced combat medics for unit of assignment to influence combat medic proficiency.

Direct-line Supervisors of Experienced Combat Medics

Sampling Error: Was the final Phase I sample of direct-line supervisors representative of the four installations? The 1997 MODS was used to determine the number of direct-line supervisors of experienced combat medics assigned to each of the four installations chosen for study. Table 19 shows the final sample size of supervisors as a function of the target population. Note that the final sample (Total) was equivalent in size to 103% of the combat medic direct-line supervisors normally expected to be

available at these four installations (i.e., not deployed, on leave, out-processing, etc.) A sample of this size should provide a statistically reliable sample. That is, given a finite population of 804 direct-line supervisors of experienced combat medics, a sample of 255 supervisors provides survey results with a maximum 4% margin of error (α=0.05 and p/f $\leq$0.80/0.20). For example, at these four installations the population of supervisors was 81% male and 19% female (MODS, 1997). The sample for this study was 78% male and 20% female (2% missing data). Similarly, the population of supervisors was 86% non-commissioned officers and 14% commissioned officers (MODS, 1997). The sample for this study was 84% non-commissioned officers and 14% commissioned officers (2% missing data). The sample was well within the 4% margin of error.

Table 19: Direct-line Supervisor of Experienced Combat Medics Sample Size

Installation	Number of Assigned Personnel	Number of Personnel Estimated to be Available	Number of Personnel Obtained in Sample	Sampling Rate
Fort Bragg	174	56	52	93%
Fort Carson	164	51	52	102%
Fort Hood	342	95	101	106%
Fort Lewis	124	42	47	112%
Total	804	244	255	105%

Demographics: What was the demographic composition of the final Phase I sample of direct-line supervisors? Table 20 shows the distribution of responses to the demographic questions posed to direct-line supervisors of experienced combat medics (see Appendix F). Forty one percent had more than five years of total experience in TOE, but only 13% had more than five years in TDA. At the time of this study, 81% were TOE assignments. About 80% of the direct-line supervisors were mid-to-upper level enlisted (E5-E9) males over the age of 25. Most had had some college education and about half had earned a college license or degree.

Table 20: Demographics of Phase I Sample of Direct-line Supervisors of Experienced Combat Medics (n = 255)

Demographic Variable	Percent	Demographic Variable	Percent
Total Military Medical Experience		**Age**	
less than 1 year	3%	18 to 20	2%
1 to 5 years	24%	21 to 25	13%
6 to 9 years	37%	26 to 36	65%
10 or more years	25%	37 to 46	16%
missing	11%	missing	5%
Total Experience in TOE		**Gender**	
less than 1 year	11%	male	78%
1 to 5 years	45%	female	20%
6 to 9 years	24%	missing	2%
10 or more years	17%		
missing	5%		
Total Experience in TDA		**Ethnicity**	
Less than 1 year	35%	Caucasian-American	53%
1 to 5 years	42%	African-American	20%
6 to 9 years	11%	Hispanic-American	13%
10 or more years	2%	Other	11%
missing	9%	missing	3%
Current Assignment		**Civilian Educational Level**	
TOE	81%	High School	10%
TDA	15%	Some College, no degree	37%
missing	4%	Some College, license	17%
Rank		Associate's degree	15%
E2 to E4	4%	Undergraduate degree	12%
E5 to E7	79%	Advanced degree	7%
E8 to E9	1%	missing	2%
O1 to O3	14%		
missing	2%		

Perceptions of Key Issues: What were the noteworthy performance and training issues? Experienced combat medics and their direct-line supervisors were surveyed on a variety of issues concerning the performance and training of 91B10 medics at the AMEDD Center& School, in the field, and on the job (See Appendix A and Appendix F, respectively. The following paragraphs summarize the similarities and differences in survey responses between experienced combat medics and their supervisors on five key issues.

(1) Experienced Combat Medic Proficiency. Item 1 of the questionnaire asked direct-line supervisors to rate "the proficiency of experienced combat medics in your unit" (See Appendix F). Table 21 shows the distribution of their responses to this item. Like experienced combat medics (see Table 12), supervisors believed that the majority of experienced combat medics needed assistance to perform core life-saving skills. Table 22 provides a direct comparison of experienced combat medic and direct-line supervisor ratings of the proficiency of experienced combat medics. Although experienced combat medics were rating something concrete (their own *individual* proficiency), while direct-line supervisors were rating something abstract (the *typical* proficiency of the *group* of medics in their unit), this comparison is pertinent. Direct-line supervisors were less likely than experienced combat medics to believe that combat medics were proficient.

Table 21: Distribution of Direct-line Supervisors' Ratings of the Proficiency of Experienced Combat Medics on Life-saving Skills (n = 255)

Life-saving Skills	Missing	Not Observed	Unable to Perform	Perform with Continuous Assistance	Perform with Moderate Assistance	Perform with Minimal Assistance	Perform with No Assistance
Assess Casualty	2%	4%	2%	16%	26%	31%	19%
Manage Airway	3%	4%	2%	16%	26%	28%	22%
Control Bleeding	2%	3%	1%	4%	19%	28%	45%
Insert IV	2%	2%	1%	6%	21%	29%	40%
Treat NBC Casualty	2%	10%	16%	20%	29%	14%	9%

Table 22: Comparison of Experienced Combat Medic and Direct-line Supervisor Ratings of the Proficiency of Experienced Combat Medics on Life-saving Skills

Life-saving Skills	Experienced combat medics rating themselves as needing minimal or no assistance (n = 347)	Direct-line Supervisors rating experienced combat medics as needing minimal or no assistance (n = 255)
Assess Casualty	65%	50%
Manage Airway	80%	50%
Control Bleeding	87%	73%
Insert IV	89%	69%
Treat NBC Casualty	24%	23%

(2) New Combat Medic Proficiency. Item 10 of the questionnaire asked direct-line supervisors to rate "the proficiency of new medics in your unit" (See Appendix F). "New medic" was defined in the questionnaire as a "combat medic with less than 1 year experience." Table 23 shows the distribution of their responses to this item. Direct-line supervisors believed that the majority of new combat medics needed assistance to perform basic life-saving skills. Table 24 provides a direct comparison of the direct-line supervisor's ratings of the proficiency of new and experienced combat medics. It was clear that direct-line supervisors believed that new combat medics did not arrive at the unit trained to proficiency and that experienced combat medics made only small gains in proficiency through on-the-job training. Table 24 is a profoundly disturbing synopsis of the state of the art of the combat medic. A representative sample of direct-line supervisors at four major Army installations indicated that a significant percentage of experienced new combat medics were not prepared to perform core life-saving skills.

Table 23: Combat Medic Direct-line Supervisors' Ratings of the Proficiency of New Combat Medics on Life-saving Skills (n= 255)

	Missing	Not Observed	Unable to Perform	Perform with Continuous Assistance	Perform with Moderate Assistance	Perform with Minimal Assistance	Perform with No Assistance
Assess Casualty	5%	10%	12%	28%	28%	13%	6%
Manage Airway	5%	8%	9%	31%	22%	17%	8%
Control Bleeding	5%	5%	5%	14%	21%	25%	26%
Insert IV	5%	5%	9%	24%	24%	18%	16%
Treat NBC Casualty	6%	20%	32%	18%	18%	4%	2%

Table 24: Comparison of Ratings of the Proficiency on Life-saving Skills of New and Experienced Combat Medics (n= 255)

	Direct-line Supervisors rating *NEW* combat medics as needing minimal or no assistance	**Direct-line Supervisors rating *EXPERIENCED* combat medics as needing minimal or no assistance**
Assess Casualty	19%	50%
Manage Airway	25%	50%
Control Bleeding	51%	73%
Insert IV	34%	69%
Treat NBC Casualty	6%	23%

(3) Unit Training Priorities. Item 3 of the Direct-line Supervisor & Trainer Questionnaire asked the combat medic direct-line supervisors to indicate how often 91B10 medics had trained on life-saving skills, military medic skills, and soldier skills in the last 12 months (See Appendix F). Forty-two percent of the direct-line supervisors indicated that they had provided weekly or monthly training on life-saving skills. Experienced combat medics were asked a similar question in Item 8 of their questionnaire (see Appendix A). Their answer was quite similar; thirty-eight percent of the experienced combat medics indicated that they had trained weekly or monthly on life-saving skills.

Direct-line supervisors were asked on Item 25 of the Direct-line Supervisor & Trainer Questionnaire to indicate which skills combat medics practiced on the job (see Appendix F). Experienced combat medics were asked the same question in Item 21 of the Experienced 91B10 Medic Questionnaire (see Appendix A). As shown in Table 25, experienced combat medics and direct-line supervisors agreed on some skills (e.g., apply hot/cold packs) and disagreed on others (e.g., vital signs). Neither experienced combat medics nor direct-line supervisors indicated that medics routinely practiced all the core life-saving skills on the job.

Table 25: Comparison of Experienced Combat Medic and Direct-line Supervisor Ratings of the Tasks Commonly Practiced by 91B10 Medics

Life-saving Skill	Task	Combat Medics choosing the skill as one practiced by 91B10 medics (n = 347)	Direct-line Supervisors choosing the skill as one practiced by 91B10 medics (n = 255)
Assess Casualty	vital signs	4%	87%
	take patient history	43%	70%
	perform physical examination	68%	47%
	lift/transfer patients	79%	51%
	perform triage	47%	49%
Manage Airway	perform manual airway skills	48%	35%
	perform CPR	33%	42%
	administer oxygen	6%	51%
Control Bleeding	apply bandages/ dressings	54%	79%
	apply hot/cold packs	70%	69%
Insert IV	create a sterile field	44%	32%
	put on sterile gloves	44%	45%
	start IV	52%	80%
	monitor patient on IV fluids	78%	70%

(4) Unit Training Resources. Direct-line supervisors were asked on Item 6 of the Direct-line Supervisor & Trainer Questionnaire to indicate which resources they used to train core life-saving skills in the last 12 months (see Appendix F). Experienced combat medics were asked a similar question in Item 10 of their questionnaire (see Appendix A). As shown in Table 26, there was remarkably good agreement between combat medics and their supervisors about which resources were used. These data show that a variety of media were available for training. Mannequins and physical simulators were commonly used, but computer simulations were not. Moreover, it seems that most units used field exercises and soldiers as simulated patients for training purposes. Combat medics and supervisors differed the most in assessing textbook use (50% vs 72%).

Table 26: Comparison of Experienced Combat Medic and Direct-line Supervisor Ratings of the Use of Training Resources

Training Resources	Medics using the resource (n = 347)	Supervisors using the resource (n = 255)
Mannequins	64%	67%
Simulators (IV arm)	66%	66%
Videotapes	48%	47%
Computer Simulations	10%	19%
Moulage	49%	51%
Field Exercises	81%	86%
Soldier "Patients"	78%	80%
Textbooks	50%	72%

Additionally, direct-line supervisors were asked on Item 18 of their questionnaire to identify training barriers they encountered (see Appendix F). Almost half of the direct-line supervisors (47%) said they had no barriers. The majority of the direct-line supervisors (85% to 90%, see Appendix F) indicated that they had adequate access to patients, supplies, equipment, and training aids. However, 30% of direct-line supervisors indicated that they did not have the command support that they needed.

(5) School Training Priorities. Direct-line supervisors were asked on Item 20 of the questionnaire to indicate what they thought the 91B10 school's priorities for teaching skills to proficiency should be in the course (see Appendix F). Experienced combat medics were asked a similar question in Item 14 of their questionnaire (see Appendix A). As shown in Table 27, there was good agreement among direct-line supervisors that core life-saving skills should be a high priority and that information management skills should not. Experienced combat medics agreed with direct-line supervisors on the relative importance of skills, with one exception. Experienced combat medics were more likely than direct-line supervisors to rate patient care skills as a high priority.

Table 27: Comparison of Combat Medic and Direct-line Supervisor Ratings of Training Priorities for the Combat Medic Course

Skills	Combat Medics rating the skill as needing a high priority (n = 347)	Direct-line Supervisors rating the skill as needing a high priority (n = 255)
Life-saving Skills	91%	83%
Military Medic Skills	50%	42%
Soldier Skills	33%	38%
Patient Care Skills	54%	34%
Sick Call/ Clinic Skills	51%	44%
Information Management Skills	14%	8%

Qualitative Results of Phase I

Experienced Combat Medics

A total of 160 experienced combat medics out of 347 (46%) surveyed offered written comments. From the written comments several trends emerged relating to primary duties, medical skill training, value added to the unit, AIT training, and unit training resources.

One important factor that emerged from the data was related to experienced combat medics' primary duties. Forty-six percent (73/160) of the experienced combat medics responding stated that their primary duties as a combat medic were working in the motorpool, details, parades, lawn care, sandbag filling, and warehouse duty, rather than doing patient care or practicing life-saving skills.

A second factor that emerged from the data related to combat medic training. Forty-three percent (70/160) of experienced combat medics responding stated they needed more "real world" training in the unit. These experienced combat medics believed they would lose proficiency in medical skills unless they routinely practiced them in the unit.

Another important factor that emerged from the written data was that 29% (46/160) of experienced combat medics responding felt frustrated and disappointed with the 91B MOS because they did not perform medical skills. They lacked the opportunity to train and perform medical skills. The collective perception of these combat medics was that they were not prepared for war or other conflicts where loss of life was possible and felt poorly prepared to save a life. Experienced combat medics did not feel that their MOS enhanced the unit. This viewpoint influenced reenlistment and made keeping an experienced work force on active duty difficult.

The fourth factor from the written data was concern about the AIT mission. Twenty-three percent (38/160) of the experienced combat medics responding stated that AIT should be longer, more detailed regarding life-saving skills, and more focused on other medic skills. In addition, these experienced combat medics suggested that AIT should have clinical rotations that provided exposure to patients.

The last factor from the data was concern for training resources. Thirteen percent (22/160) of the experienced combat medics responding indicated they needed computers; they needed to train with up-to-date medical equipment and to take advantage of educational opportunities. These barriers to training created stress on combat medics.

Direct Line Supervisors of Experienced Combat Medics

A total of 255 combat medic direct line supervisors were surveyed in Phase I. A total of 59 (23%) of these direct line supervisors offered written comments. Several factors emerged from their written feedback.

The first factor that emerged from the written comments was related to training issues. Eighty-three percent (49/59) of the direct line supervisors responding believed that command lacked interest in training life-saving skills. These supervisors believed commanders' priorities were for motorpool activities, taskings, and post details such as lawn care. These supervisors indicated a balance did not exist between the combat medics' medical mission and non-medical mission. Fifty-eight percent (34/59) believed combat medics to be poorly trained in medical skills because that training received low priority in unit training.

A second factor that emerged from the written comments was the low value placed on the role of experienced combat medics in the unit. Seventy-five percent (44/59) direct line supervisors responding were disappointed by the combat medics' role in the line unit. The commanders' low priority for medical skills training and high priority given to other duties like motorpool activities and lawn care reinforced the perceived low value of combat medics in line units.

A third factor was concerns about the issue of sustainment training. Forty-four percent (26/59) of the supervisors that offered written comments perceived a need for commanders to increase the value placed on sustainment training and to build this training into other unit priorities. Fifty-six percent (33/59) of the supervisors that offered written comments recommended that a priority be placed on sustaining combat medics' proficiency on life-saving skills.

Another factor from this data was the concern over new combat medics. Thirty-one percent (18/59) of direct line supervisors believed that new medics had numerous health problems, were in poor physical shape, and lacked a sense of mission, respect, or discipline. Twenty-nine percent (17/59) of the supervisors responding believed AIT should be longer, more in-depth, and more focused on medical skills with real patients.

They also stated AIT should emphasize more triage, field medicine, and combat care management.

A fifth factor that emerged from the data was the need for units to have training resources. Seventeen percent (10/59) of the supervisors responding indicated they needed training resources such as computers, medical equipment, and supplies. These supervisors commented that medics were the last to get computer support in their units.

The last factor that emerged from the direct line supervisors' written comments was the need for a balance in combat medic assignments between line units and hospitals. Fourteen percent (8/59) of supervisors responding perceived an imbalance in combat medics' assignments between the line units and hospitals. They believed that medics should routinely rotate between tours of duty in line and hospital units. Richardson's (1989) findings support both of these findings. Furthermore, direct line supervisors agreed that cross training between line units and hospitals was beneficial. They suggested that the way MPT was conducted was not meeting the cross training need.

Conclusions

Experienced Combat Medics

- The sample data had less than 4% margin of error.
- These data clearly show that the hands-on performance of experienced combat medics was inadequate. The typical experienced combat medic could pass one of four tests of life-saving skills.
- These data clearly show that the cognitive test performance of experienced combat medics was inadequate. The typical experienced combat medic could pass one of the four written tests of life-saving skills. Performance on the cognitive test of treating an NBC casualty was so low that it suggested a serious deficiency in military medical readiness.
- The performance of experienced combat medics on the cognitive test did not predict their performance on the core life-saving skills hands-on tests.
- Age did not predict cognitive or hands-on test performance.
- The highest-ranking combat medics (E4) consistently scored higher than low ranking (E2 and E3) combat medics. The difference was statistically significant for all four of the hands-on performance tests.
- Experienced combat medics with college experience or a college degree consistently scored higher than those with only a high school education. However, the difference was statistically significant on only three of the six cognitive tests.
- School motivation did not predict cognitive or hands-on test performance.
- Self-directed learning did not predict cognitive or hands-on test performance.
- The majority of experienced combat medics rated themselves proficient on only two of the five life-saving skills. Only 6% of experienced combat medics rated themselves as proficient in treating NBC casualties.

- Experienced combat medics who perceived themselves to be proficient were consistently more proficient than those who did not. These differences were statistically significant on all four of the core life-saving hands-on performance tests.
- Experienced combat medics with less than one year of TOE experience scored significantly lower on all four of the core life-saving skills hands-on tests than more experienced combat medics.
- Experienced combat medics who got monthly or weekly training on the life-saving skills did not consistently perform better than those who got less frequent training. These data suggest that *frequency* of training is not the key to improving performance. Furthermore, studies on the influence of quality of training and skill practice should be conducted.
- Experienced combat medics who got more than 30 days a year of patient interaction did not perform significantly better than those who got fewer. These data suggest that frequent patient interaction is not the key to improving performance. It is more likely that the nature of the work done when interacting with patients is the key.
- Although installations were significantly different on several of the life-saving skill tests, no installation was consistently better than all the others, nor did any installation have consistently adequate performance (mean scores above passing). These data support an emerging pattern of evidence which suggests that sustainment training in the field was not of sufficient quality to support medical readiness and that this problem was the result of a complex set of organizational factors, which affected many installations, rather than a single simple personnel or training deficiency.
- There was not enough diversity in assignments of experienced combat medics for unit of assignment to influence proficiency on life-saving skills.
- 46% of the experienced combat medics surveyed offered written comments.
- 46% of the experienced combat medics who offered written comments stated their primary duties were motorpool activities, lawn care, warehouse work, and other non-medical details.
- 33% of the experienced combat medics who offered written comments stated combat medics needed "real world" training on medical skills.
- 29% of the experienced combat medics who offered written comments stated they were frustrated and disappointed with the 91B MOS because they did not use their medical skills and the MOS had no career advancement.
- 23% of the experienced combat medics who offered written comments stated the 91B10 course needed to be longer and more detailed regarding life-saving skills and other combat medic skills.
- 13% of the experienced combat medics who offered written comments stated they needed computers and up-to-date medical equipment for training life-saving skills.

Direct-Line Supervisors of Combat Medics

- The sample data had less than a 4% margin of error.
- The data represents the population of Army direct-line supervisors of experienced combat medics.
- Direct-line supervisors believed that the majority of experienced combat medics needed assistance to perform the five life-saving skills.
- Direct-line supervisors were less likely than experienced combat medics to believe that experienced combat medics were proficient on life-saving skills.
- Direct-line supervisors believed that the majority of new combat medics needed assistance to perform life-saving skills.
- Direct-line supervisors believed that new combat medics did not arrive at the unit trained to proficiency and that experienced combat medics made only small gains in proficiency through on the job training.
- Forty-two percent of the direct-line supervisors indicated that they had provided weekly or monthly training on life-saving skills. Almost as many of the experienced combat medics (38%) indicated that they had trained weekly or monthly on core life-saving skills.
- Neither experienced combat medics nor direct-line supervisors indicated that 91B10 medics routinely practiced all the life-saving skills on the job.
- There was remarkably good agreement between experienced combat medics and their supervisors about which resources were used. Mannequins and physical simulators were commonly used, but computer simulations were not. Most units used field exercises and "simulated" patients for training purposes.
- Almost half of the direct-line supervisors (47%) said they had encountered no barriers to training. The majority of the combat medic direct-line supervisors (85% to 90%) indicated that they had adequate access to patients, supplies, equipment, and training aids. However, 30% of direct-line supervisors indicated that they did not have the command support that they needed.
- 23% of the combat medics' direct-line supervisors surveyed offered written comments.
- 83% of the direct-line supervisors who offered written comments stated line unit commanders were not concerned with training life-saving skills and that commanders' priorities were devoted to motorpool activities, lawn care, warehouse work, and parades.
- 75% of the direct-line supervisors who offered written comments stated the experienced combat medics' role in the unit was a disappointment.
- 56% of the direct-line supervisors' who offered written comments stated experienced combat medics should have sustainment training on life-saving skills in order to maintain proficiency.
- 44% of the direct-line supervisors' who offered written comments stated command interest in combat medic sustainment training was inadequate.
- 31% of the direct-line supervisors' who offered written comments stated new combat medics arrived with many health problems, were in poor physical shape, and lacked a sense of mission, respect, and discipline.

- 29% of the direct-line supervisors' who offered written comments stated 91B10 school should be longer, more in-depth, more focused on medic skills with real patients, and more concerned with triage, field medicine, and combat casualty management.
- 17% of the direct-line supervisors' who offered written comments stated line units needed training resources such as computers, medical equipment, and supplies.
- 14% of the direct-line supervisors who offered written comments stated combat medics needed a balanced rotation of assignments between line units and hospitals.

Discussion

The "experienced combat medic" in this study was 91B10 skill level medic. As used in this study, the term "experienced combat medic" did not indicate that the individual had combat experience, nor did it indicate that the individual had extensive experience in providing life-saving medical treatment. The term was used to describe medics who graduated from the 91B10 combat medic school six months to five years prior to the beginning of Phase I of the study. That is, they were no longer new to their MOS and thus could be called upon to perform core life-saving skills in situations in which their performance would be the deciding factor in determining whether a fellow soldier lived or died.

The results of this study indicated that the typical experienced combat medic was not proficient at performing core life-saving skills (see Table 8). Only ***two in ten*** of these medics were able to meet the ***minimum*** standard of performance on hands-on tests of (a) assessing a casualty or (b) stopping bleeding. Only ***five in ten*** of them were able to meet the ***minimum*** standard of performance on a hands-on test of managing an airway. Inserting an IV was the only skill on which the majority of experienced combat medics could meet the minimum standard of performance. This finding, the most basic finding of the study, combined with the previous studies of 91B10 training and on-the-job performance (Blythe, Dembeck, and Murphy, 1979; Training Evaluation Division, 1981; Richardson, 1989; Zadinsky, 1997) made clear both the fundamental problem with traditional 91B10 training and the critical element required to solve the problem. Life-saving skills must be taught in a concrete, realistic manner and they must be practiced repeatedly. Inserting an IV was the only skill that was routinely taught and practiced in this manner. Thus, the majority of experienced combat medics were proficient only on this skill. Moreover, studies of the performance of civilian EMTs confirmed that this finding was not unique to the military setting (Latman and Wooley, 1980; Skelton and McSwain, 1977; Zautche, Lee, and Ethington, 1987).

The results of this study also indicated that the typical experienced combat medic had not acquired the basic concepts underlying life-saving skills (see Table 9). Particularly troubling was the fact that less than ***two in ten*** of these medics were able to meet the ***minimum*** standard of performance on a simple written test of the basic principles underlying treatment of NBC casualties. This finding indicated a very low degree of military medical readiness for a realistic NBC military threat.

There were some encouraging results in Phase I. In this sample of experienced combat medics, those with higher ranks consistently performed better than those with lower ranks (see Table 10) and those with college experience performed better than those with only high school experience (see Table 11). These results were similar to those of earlier studies of the performance of 91B10 medics (Richardson, 1989; Zadinsky, 1997). Thus, it was clear that experienced combat medics could improve given the opportunity.

Analysis of the perceived proficiency of experienced combat medics provided a similar insight into the state of military medical readiness. Those medics who perceived themselves to be proficient were consistently more proficient than those who did not. These differences were statistically significant on all four of the hands-on tests of core life-saving skills (see Table 13). However, far more medics perceived themselves to be proficient than were actually proficient (compare Tables 8, 9 and 12). Said another way, typical 91B10 medics did not perceive themselves to be proficient and they were correct. However, those who did perceive themselves to be proficient were often, but unfortunately not always, correct.

Analysis of the influence of training frequency, frequency of interaction with patients, and installation of assignment, along with the analysis of the qualitative data suggested that on-the-job training of experienced combat medics was not focused on life-saving skills and so did little to sustain performance of critical skills. Experienced combat medics reported that (a) they spent substantial amounts of duty time in non-medical duties, such as vehicle maintenance and lawn care, (b) medical duties were limited to patient management activities, and (c) sustainment training did not focus on practicing life-saving skills under realistic conditions. Thus, the present study confirms that problems with 91B10 training identified many years ago continue to persist and to compromise military medical readiness (Blythe, Dembeck, and Murphy, 1979; Training Evaluation Division, 1981; Richardson, 1989). Furthermore, these results reflect the inadequacy of sustainment training negatively influenced morale in a substantial number of experienced combat medics and was the principal reason for their considering leaving the MOS or the Army. These results, taken as a whole, demonstrate that cost of inadequate sustainment training is extraordinarily high medically, militarily, and economically.

The supervisors of experienced combat medics corroborated all of these results. They indicated that the typical experienced combat medic was not proficient on the four core plus NBC life-saving skills. They confirmed that substantial time was spent on non-medical duties and training on non-medical skills. They confirmed that 91B10 medics did not routinely practice life-saving skills on the job. They indicated that the major barrier to conducting sustainment training on critical medical skills was lack of command support. They believed that low morale among experienced combat medics was responsible for high turnover rates.

PHASE II: EXPERIMENTAL COURSE

Design

Phase II utilized a prospective experimental design. Outcomes of an experimental training course of ten weeks were compared to those of traditional ten-week combat medic course. Content of the experimental course was equivalent to that of the traditional course. However, the emphasis of the experimental course was on a model schoolhouse using teaching strategies of adult learning, student interactions, and expanded hands-on skill practice as training foci for skill proficiency.

For both the experimental and control groups, in-processing was conducted according to 232nd Medical Battalion Standard Operating Procedure (SOP) (see Appendix O). Once in-processing was complete, introduction to the classroom and a tour of the facilities was done. The geography of the schoolhouse arrangement made for easy logistical management. Combat medic students were housed in barrack bays above the classrooms and lab rooms with the dining facility below on the first level. The covered training areas (CTA) were used for formations, physical training, and a central gathering point for the soldiers. Bulletin boards, telephones, and refreshment dispensers were easily accessible.

Both the experimental and traditional training models were based on the United States Department of Transportation (DOT) 1994 EMT-B curriculum (Appendix I), military medic skills, combat medic skills, and a military field training exercise (FTX). Combat medics in both training models attended classes at Fort Sam Houston and were housed at Fort Sam Houston.

Throughout Phase II, use of the 232nd Medical Battalion Chaplain and Community Mental Health Services allowed for effective management of distracters that might have otherwise resulted in serious incident or course failure by the student.

Experimental Course

This course was designed to provide a training program that allowed more time to practice clinical skills. It incorporated principles of adult learning with an interactive approach, encouraged student responsibility for learning, and implemented peer coaching and small group discussion. The experimental course was reviewed and approved by the Office of the Dean, Academy of Health Sciences (AHS), Academic Standards, AHS, and the 232nd Medical Battalion prior to implementation. A copy of the Program of Instruction (POI) is provided in Appendix K.

The experimental course differed from the current combat medic course at the 232nd Medical Battalion in several ways: (1) military instructors used teaching methods that actively engaged combat medic students in the multi-sensory training process; (2) military instructors taught combat medic students the four core life-saving measures to proficiency; (3) military instructors graduated from a small-group instructors' training

course; (4) military instructors had a refresher course in basic and advanced medical skill prior to implementation of the model; (5) combat medic students of the experimental model had 16 hours of emergency department and intensive care experience at Brooke Army Medical Center (BAMC) at Fort Sam Houston Texas; (6) combat medic student had increased student interactions; and (7) hands-on instructor-student (1:12) and equipment-student (1:12) ratios were lower.

One of the most effective components of the classroom for the experimental model layout was the location of study rooms at the rear of the classrooms and labs for quiet or group study. In addition, there were six computers located at the rear of the classroom with programs that mirrored the classroom text. The computers were not used as a primary study source since the presentation of material was principally paper/pencil and lecture.

An integral part of the model is allowance for sufficient reflection, critical thinking, and integration. Each day began at 0430 and ended with lights out at 2100. Personal time for the student was very limited by the ten-week course length, which influenced implementation of the experimental course. Combat medic students were given personal time to study and make any necessary preparations for the next training day from 2000-2100. Otherwise, all student time was structured.

Multiple training schedule changes occurred throughout the iterations of the experimental course due to facilities and equipment availability. Additionally, staffing changes impacted when subjects could be taught. These changes came about largely because of staff duties and ancillary duty assignments. The clinical rotations at BAMC were partially rescheduled (two rotation days) because the start date for the first iteration had to be delayed by two weeks.

Instructor Preparation

Once instructors were selected, they went through preparatory training to teach in the MT2K experimental course. Preparation included completing formal coursework and practice sessions in adult teaching strategies, attending a course in small-group teaching, and undergoing clinical refresher training.

The coursework and practice sessions in adult teaching strategies concerned the Staged Self-Directed Learning Model (SSDL; Grow, 1991). This training was aimed at inculcating the SSDL Model into the instructors' teaching strategies. SSDL Model training included weekly classroom sessions provided by the Co-Investigator for four weeks prior to the start of the experimental course. Each member of the instructor staff attended the training. All were interviewed and all demonstrated their understanding of the SSDL Model. Once familiar with the SSDL Model, instructors performed their newly acquired skills in the "Mock Schoolhouse" sessions. These practice sessions gave instructors confidence in using the new teaching strategies involving adult learning principles. In addition, instructors practiced with new teaching equipment such as computers and new models of slide projectors.

The "Mock Schoolhouse" sessions were held in the classrooms where combat medic training would occur. The instructors were asked to present the most difficult aspect of selected classes from the experimental course POI. In the audience were other instructors, the Principle Investigator, the Co-Investigator, the MT2K Project Manager, and the Training Director, allowing for a broad-based critique. The "Mock Schoolhouse" sessions represented the bulk of the experimental course POI. These sessions also laid the foundation for high inter-rater agreement when performing testing combat medic students.

The Small Group Instructor Trainer Course (SGITC) focused on teaching using a small group format. The course provided the opportunity for the experimental course instructors to develop new skills directed at a small group (12 students), instead of a larger group (50 students). Basic and advanced medical skill refresher training was obtained by completing the Pre-Hospital Trauma Life Support (PHTLS) course. Participation in the SGITC and PHTLS were helpful in preparing the instructors for the platform and clinical rotations.

Besides completing their preparatory training duties, the instructors were expected to help develop lesson plans that reflected the selected curriculum. In addition to the preparatory work for didactic presentation, each faculty member worked in the Emergency Department and in the Surgical Intensive Care Unit (SICU) at BAMC for one week. This was done to re-fresh their knowledge of current Standard Operating Procedures (SOP), equipment, and staff in preparation for the scheduled student clinical rotations.

Course Preparation

Instructors and members of the curriculum advisory committee assisted in producing the POI, Lesson Plans, and the Student Evaluation Plan (SEP). It was crucial in the development of each of these cornerstone documents to use formats similar to those used in the 232nd Medical Battalion. Lack of familiarity with the MT2K Study Proposal created unforeseen challenges, since formatting issues were a central stumbling block in this process causing delays and demanding compromises in order to meet deadlines. It was ultimately decided that final coordination should be channeled through the Training Director who acted as a checkpoint for consistency with the proposal, with guidance from the Principal and Co-investigators.

In order to determine common skills important for the future combat medic to perform, researchers conducted an analysis of combat medic skills from several sources: (1) 91B Training Task Selection Board [Appendix J]; (2) Joint Vision 2010 First Responder Seminar; (3) Brilliant Medic Self-Directed Work Group; (4) military manuals, such as the Expert Field Medical Badge (EFMB), Combat Medic Life Saver, and the Soldier's Manual and Trainers Guide for MOS 91B Medical Specialist Skill Levels 1/2/3/4/5; (5) Training Command (TRADOC) Regulation 350-6; and (6) military medic programs other than the combat medic course These skills were then compared with

literature on casualty survival to target core medic skills, core military medic skills, and core combat medic skills for the combat medic curriculum.

The POI for the experimental group was developed from the January 1998 Training Task Selection Board (TTSB) for 300-91B10. Each task to be trained under the experimental course POI had a weight point of 5.0 or higher from the TTSB. The choice of 5.0 was based upon advisement from the TTSB board and a panel of experts. Along with these identified tasks, the combat medic students in the experimental group received 40 classroom hours of instruction on field sanitation and certification testing. In addition, these soldiers were taught study techniques and test-taking strategies, as well as critical thinking training. All texts supporting this training were supplied during training. Combat medic students kept their EMT-B workbook as a personal reference after leaving the course.

The Student Evaluation Plan (SEP) was developed as a combat medic student's guide that described the course, prerequisite requirements, counseling and testing policy, and other pertinent information (Appendix N). This SEP differed from the control group course SEP (Appendix O) in that combat medic students were expected to perform at a higher standard than in past years.

Under previous guidelines, combat medic students could fail an exam three times before being recycled or removed from the course. Under the MT2K SEP, combat medic students could only fail a test two times. A second failure would result in the recycle of the combat medic students into the next available traditional combat medic course.

Didactic Instruction

During classroom instruction, a primary instructor presented the material in an interactive, lecture format consistent with the goals of the SSDL Model (Grow, 1991). Like the control group, the experimental group used an instructor-to-student ratio of 1:50. During lecture periods, an assistant instructor helped answer questions and monitored student behavior; both the instructor and assistant instructor observed for deliberate and/or non-verbal indicators of learning difficulty.

Following each iteration of the experimental course, a critique and formalized re-visit of proper adult teaching strategies was conducted in a classroom environment. The instructors were encouraged to describe what worked and what didn't at each phase of the SSDL Model (Grow, 1991). Where conceptual gaps existed, corrections were made. From this process, the instructors directly improved their ability to deliver the information consistent with the SSDL and the design of the study.

Likewise, the Training Director monitored training as it occurred and provided timely instructor critique in order for the instructors to make micro improvements during each iteration. It was this constant "cleaning up" of teaching methods that insured continuity in the curriculum. In the same way during the Subject Matter Expert (SME)

meetings held just before any hands-on event, technical corrections were made to insure the best possible presentation.

Soldier Skills

The development of combat medics' soldier skills was multifaceted and was key to integrating soldier skills with medical skills. It was important to incorporate: (1) battle drills that include triage and casualty assessment, initiation of an IV infusion, initiation of a Department of Defense DD Form 1380 (Field Medical Card), evacuation of the sick and wounded via air ambulance, manual patient carries, and operation of a Single Channel Ground and Airborne Radio System (SINCGAR); (2) force protection (shoot, move, & communicate) skills such as moving to casualties, treating them, preparing them for evacuation, and protecting them while they are in the medic's care - all in accordance with EMT and EFMB standards; and (3) physical fitness training.

Army Physical Fitness Training was conducted each training day in accordance with Army Regulation AR 350-6. A diagnostic Army Physical Fitness Test (APFT) was given on day three and a record APFT was given on day 38 of the eight-week course. Combat medic students passed the record APFT by graduation or they were considered for separation from service, hold status, or waiver in accordance with AR 350-6 and local SOPs. Combat medic students were also inspected; e.g., daily inspections of their uniforms, open wall-lockers, and common living areas. These inspections were an integral part of military training and were conducted in accordance with the 232nd Medical Battalion SOP.

As part of the APFT program, each Tuesday morning the experimental group received battle-focused physical training that included litter-carries, movement to contact in tactical formation, and other drills that are routinely used in the life of combat medics on the battlefield. These exercises were designed to put the ongoing training into perspective for the soldiers. These students were offered the opportunity to practice skills needed at virtually every echelon on the battlefield and could generalize learned skills to whatever situation was given.

Testing

Academic testing for the experimental course included seven written exams. Each examination was weighted relative to content and whether it was a final exam or an interim check on learning. The exams were weighted as shown:

- CPR (25 items) 15%
- Brady I (Chapters 1-9) (50 items) 15%
- Brady II (Chapters 10-24) (50 items) 15%
- Brady III (Chapters 24-33) (50 items) 15%

- Military Specific Skills Exam (50 items) 15%
- Comprehensive Final (100 items) 25%
- Field Sanitation Pass/Fail (50 items)
- Graded Practical Exercises Pass/Fail
  (Performance Skill Sheets for the Core Life-Saving Skills)

In addition, the National Registry EMT-B certification examination was given to combat medic students. It was not computed as part of the GPA nor was it a requirement for course completion. The certification examination was given in week five of the course.

Lab (Hands-on) Instruction

The lab teaching was modeled after the National Registry Emergency Medical Technician (NREMT) curriculum guidelines and the conceptual framework of the SSDL Model. The emphasis in lab teaching was on small group instruction where combat medic students assumed responsibility for their learning and interacted with each other. During this portion of the training, instructor-to-student and equipment ratios were kept to 1:12. These ratios were used on the assumption that student psychomotor training and performance would be optimized at this ratio.

From an operational perspective, the labs were set up such that combat medic students rotated from station to station for each event. The training events planned for that given training session were ordered in logical progression from one event to the next. Performance of the combat medic students was evaluated according to the Performance Skill Sheets for the Core Life-Saving Skill Sheets (Appendix E) as discussed in greater detail in the Graded Practical Exercises section.

Graded Practical Exercise

Combat medic students were evaluated on their performance of the four core life-saving skills (Airway Management, Trauma Assessment, IV Therapy, and Bleeding Control/Shock Management). Each of these skill areas was evaluated in the same manner as described earlier in Phase I data collection using Performance Sheets for the Core Life-Saving Skills (Appendix E). All of the skills listed were taught such that there was a sequential building of skills integrated throughout the course. As a result, combat medic students in the experimental group practiced the four core life-saving skills for 70 hours in the lab setting. Additional hours were spent on classroom demonstration and application of these skills in clinical rotation.

Combat Medic students were also tested on skills and knowledge underlying the four core life-saving skills just before the FTX Phase in week nine. This skill testing was called Final Skills Testing. Final Skills Testing was not part of combat medic students' grade point average, but served as the combat medic students' baseline performance on the four core life-saving skills.

The skill sets germane to the four core life-saving skills were integrated throughout the curriculum to allow for development of the skills to proficiency rather than familiarization. The exception was the Childbirth/Neonatal Care lab that had no skill sheet. Furthermore, it was not a psychomotor skill tested for the EMT-B.

Clinical Rotations

Unlike the control group, the experimental group had clinical rotations that consisted of an eight-hour experience in the Emergency Department (ED) and eight-hours in the Surgical Intensive Care Unit (SICU). After careful coordination with the Commander and the Department of Nursing at Brooke Army Medical Center, and the MTF Commander, these rotations were conducted. An experimental course instructor was present in the clinical setting at all times. There was one instructor in the ED and one in the SICU. Each clinical area had no more than four experimental course combat medic students in accordance with the Memorandum of Agreement (MOA) with BAMC. This facilitated close instructor-student interaction and supervision without encumbering the BAMC staff.

While in the clinical setting, the experimental course combat medic students were expected to apply the skills they had learned in the classroom to patient care in a fixed facility. Combat medic students each had a stethoscope, a pen, and paper. In addition, they had supporting documents for the rotation that included the Clinical Rotation Procedure Checklist, Clinical Competency Evaluation Sheet, and a Patient Contact Form. Combat medic students were expected to become familiar with the setting, equipment, and policies. They provided skill-level appropriate care to whatever patient they were assigned and documented the care they provided. A secondary goal was to complete as many procedures as possible that were listed on the clinical forms mentioned above under the supervision of the experimental course NCO instructor.

Field Training Exercise

The FTX was conducted at the Soldier Medic Training Site, Camp Bullis, TX. The field problem lasted seven days in accordance with 232nd Medical Battalion SOP. Here, combat medic students were exposed to simulated combat conditions wherein they were expected to generalize the skills already learned to this environment. This simulation was designed to be the culmination of the training cycle and to challenge combat medic students.

The exercise included the following:

- Lane combat training for casualty management
- Battalion Aid Station (BAS) Operations
- Forward Surgical Medical Company (FSMC) Operations
- Chemical Decontamination Station (CDS) Operations
- Limited Light (Night) IV Access Training
- NBC IV Access Training
- Six Mile Tactical Road March with gear

Control Group (Traditional Training)

The control group utilized for this study was the traditional combat medic course taught at Fort Sam Houston, Texas by 232nd Medical Battalion instructors. This course differed from the experimental course not in content, but in teaching strategies. This course primarily used didactic lectures using a pedagogical approach to training. The pedagogical approach focused on the instructor giving information to memorize without active involvement of the combat medic students in the training process. The instructor-to-student and equipment-to-student ratios were 1:20<on or about pt 76 was 1:50>. This course did not include emergency department rotations or other clinical experience. The goal of this course was to familiarize combat medic students with core life-saving skills. The POI for this course is in Appendix L. A comparison of the experimental course and the control course is in Appendix M.

Combat medic students in the control group took the EMT-B certification examination. Passing the certification examination was not required for graduation from the combat medic course.

Participants

Inclusion Criteria

Inclusion criteria for participating combat medic students included: (1) ability to speak and understand English; (2) enrollment in the combat medic course for the first time as a new recruit; (3) attended no other medical course following completion of the combat medic course; (4) did not hold an EMT certification; (5) did not have prior service experience; and (6) were on active duty.

Reservists and combat medics assigned overseas were excluded from sample selection. The inability to evaluate reservist performance at the four sites after course completion was the rationale for exclusion. Reservists graduating from the combat medic course do not return to a unit in multiples of 15 or more per site, as do their active duty counterparts, making performance evaluation of reservists financially unsound for this study. Coordinating combat medic evaluations overseas was not feasible in Phase III of this study because of the high incidence of deployments and assignment turnover.

Criteria for the selection of faculty included a minimum of one year's experience as instructors; the MOS of 91B30, B1B40 or 91C40; one year of EMT-B certification; CPR instructor qualification; completion of the Faculty Development Course (FDC); possession of strong interpersonal skills; and desire to teach in the experimental course. The 232nd Medical Battalion Commander and Command Sergeant Major interviewed and selected volunteers for the position of Officer in Charge (OIC), the Non-Commissioned Officer in Charge (NCOIC), two Drill Sergeants, or Drill Instructors (DI), an Operations NCO, and an Academic Standards representative for the model schoolhouse. Army Nurse

Corps Assignments Branch of Personnel Command designated the Training Director for the experimental course.

The 232nd Medical Battalion Commander also selected six Training Officers to participate in Phase III data collection. Company commanders selected instructors and their alternates from all companies for the MT2K Study.

Training Logistics

Currently, Army enlisted personnel come to the 232nd Medical Battalion, AMEDD Center and School, Fort Sam Houston, Texas from basic training sites to take the combat medic course. This course is the entry-level medical course for enlisted personnel within the AMEDD. Individuals from the Navy and Air Force also attend the combat medic course. There are six training companies in the 232nd Medical Battalion. Every two weeks, a company enrolls a new class of approximately 300 students. Once this course is completed combat medic students are assigned positions as combat medics or go on to additional enlisted medical training, such as the licensed practical nurse (91C) or operating room technician (91D) course.

When a company starts a new class, combat medic students are assigned to a team. A team usually consists of 50 combat medic students. This process is initiated when the trainee arrives at the 232nd Medical Battalion. The combat medic students have no choice in the company or the team assignment. The selection of the combat medic students for the experimental course was based on the inclusion criteria. The drill sergeants and instructors compiled a list of eligible combat medic students and then the researchers used random numbers to assign the combat medic students to the experimental and control courses.

Two companies (D & E) from the 232nd Medical Battalion were selected for each cycle in September 1998 and January 1999. A sample of 50 combat medic students were drawn from company D from two consecutive training cycles of ten weeks in length for the experimental group. Similarly, a sample of 50 combat medic students were drawn from company E from two consecutive training cycles of 10 weeks in length for the control group. The two experimental groups were from Company D and the two control groups were from Company E in order to minimize disruptions in training for the rest of the 232nd Medical Battalion.

Sample Size

In Phase II, combat medic students were randomly selected for experimental and control groups using a random numbers table and the ninth digit of the combat medic student's social security number. Over-sampling of ten combat medic students insured sufficient backup of combat medic students if some dropped from the course due to illness, hospitalization, death in the family, or other situations. The final sample size provided a 0.80 of power when alpha $= 0.05$ effect size of < 0.50 standard deviations for key analysis of variance (experimental group $n = 81$; control group $n = 69$).

Data Collection

During the ten-week course, combat medic students in the experimental and control groups took a variety of academic tests and graded practical exercises associated with medic course work. In addition, they completed self-report questionnaires. Test scores, questionnaire results, and the EMT-B certification score were obtained for the combat medic students in both the experimental and control courses.

The administration of the self-report questionnaires was built into the course schedule and did not cause an interruption of training. If students were unsuccessful in the experimental course they were recycled into a different company and trained in a traditional combat medic course. The approximate waiting time for the next class was two weeks.

Data were collected prior to the start of the first class (baseline), during the course, and at the end of the course. Baseline data included: (1) ST/GT scores, (2) APFT scores, (3) Life-Saving Assessment--Cognitive Test scores (Appendix D), (4) School Achievement-Motivation Survey scores (Appendix B), and (5) Oddi Self-Directed Continual Learning Inventory scores (Appendix C). Data collected during the course included: (1) clinical evaluation scores, (2) cognitive test scores, (3) performance scores for the four core life-saving skills, (4) School Achievement-Motivation Survey scores (Appendix B), and (5) Oddi Self-Directed Continual Learning Inventory scores (Appendix C). Data collected at the end of the course included: (1) course grades, (2) performance scores for the four core life-saving skills (Appendix E), (3) EMT-B certification scores, (4) recycle rates, (5) Combat Medic Student Evaluation of Training scores (Appendix P), and (6) the Combat Medic Instructor Evaluation of Training scores (Appendix Q). (7) Training program costs (Appendix S).

The School Achievement-Motivation survey was administered to combat medic students within the first week of the course and again within one week of combat medic students being notified of their unit assignments. This schedule allowed for measuring changes in the combat medic students' motivation and performance.

A measure that was used continuously throughout the course was the Classroom/Lab Observation Checklist (Appendix R). This instrument was used to collect process data related to class and lab activities in the experimental and control classrooms. The Classroom/Lab Observation Checklist assessed the learning atmosphere associated with training. Researchers conducted random observation of the two courses during the 10-week course which included: (1) lectures of the four core life-saving skills, (2) hands-on training of the four core life-saving skills, (3) cognitive tests, (4) performance of the four core life-saving skills, and (5) a battlefield-focused lecture. A summary of the measurements used to collect Phase II data are in Table 28.

Table 28. Phase II - Summary of Measurements

Collection Period	Respondents	Instrument	Source/Admin Time
Baseline (Prior to 1st class)	Combat Medic Students	a) GT/ST score (ASVAB)	Student Record
		b) Life-saving Assessment-Cognitive Test	30 minutes
		c) School Achievement-Motivation Survey	10 minutes
		d) Oddi Self-Directed Continual Learning Inventory	10 minutes
Interim course data	Combat Medic Students	a) Course Tests	Grade Book
		b) Performance Skill Sheets Core Life-Saving Skills	Performance Skill Sheets
		c) Oddi Self-Directed Continual Learning Inventory	10 minutes
		d) School Achievement-Motivation Survey	10 minutes
	Combat Medic Instructors	e) Classroom/Lab Observation Tool	Observations Sheets
End of Course	Combat Medic Students	a) Course Grades	Grade Book
		b) Performance Skill Sheets Core Life-Saving Skills	Performance Skill Sheets
		c) EMT-B Certification	National Registry
		d) Student Evaluation of Combat Medic Training	20 minutes
	Combat Medic Instructors	e) Combat Medic Instructor Evaluation of Combat Medic Training	20 minutes
		f) Recycle Rate, Academic Counseling rate	Grade Book
		g) Program Costs	Cost Matrix Clinical
		h) Clinical Evaluation	Evaluation Sheet

Quantitative Results of Phase II

Cost Analysis

The total cost of initiation and day-to-day operations for Phase II was approximately $106,380 (Appendix S). This estimate omitted man-hour costs for material preparation, any necessary analysis, or reproduction costs. This cost does assume support by the installation Training Support Center (TSC) as well as the local Classroom Support Office. The estimated cost to generalize this effort to a 300-soldier company would be $588,260. This estimate does include audio-visual equipment, books, computers, mannequins, class VIII supplies, transportation to training events, field equipment (non-FTX), and facilities purchased.

Combat Medic Student Performance

Demographics: What was the demographic composition of the final Phase II sample? Table 29 shows the distribution of responses to the demographic questions posed to the combat medic students (see Appendix P), along with the distribution of combat medic students by rank (taken from faculty records). The experimental and control groups were most similar – both had about the same number of males as females. However, the experimental combat medic students had a slightly older age distribution and a higher education distribution. The most noticeable difference was in rank distribution. Nearly all of the control group combat medic students were E-2s, but only about 60% of the experimental group were E-2s with the remaining 45% being E-1s and E-3s.

Table 29: Demographics of Phase II Sample of Combat Medic Students

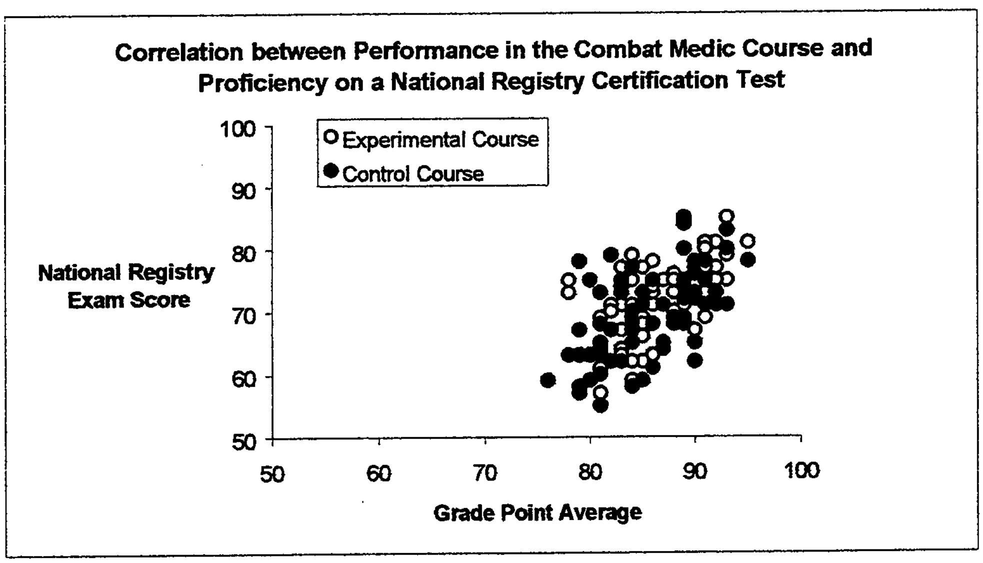
Variables	Experimental Course Combat Medic Students (n = 81)	Control Course Combat Medic Students (n = 69)
Age		
17 to 20	80%	94%
21 to 25	17%	5%
26 to 34	2%	0%
missing	0%	0%
Gender		
male	54%	52%
female	46%	48%
missing	0%	0%
Ethnicity		
Caucasian-American	49%	43%
African-American	28%	21%
Hispanic-American	12%	24%
Other	9%	10%
missing	2%	2%
Civilian Educational Level		
High School	72%	90%
Some College, no degree	22%	9%
Some College, license	4%	0%
Associate's degree	2%	0%
Undergraduate degree	0%	0%
Advanced degree	0%	0%
missing	0%	1%
Rank		
E1	26%	0%
E2	56%	99%
E3	19%	1%
missing	0%	0%

Grade Point Average: How well did combat medic students do in the combat medic course? End-of-course grade point average (GPA) was analyzed to determine whether there were higher levels of performance in the experimental course. The mean GPA was virtually identical in the two courses, 86.3 $\pm$ 3.9 SD for the experimental and 85.8 $\pm$ 4.6 SD for the control course ($p > 0.05$).

National Registry (NREMT) Exam Score: How well did combat medic students do on the national certification test? Scores on the NREMT were analyzed to determine whether combat medic graduates of the experimental course showed higher levels of proficiency. The mean NREMT scores for the two courses were quite similar, 71.6 ± 6.1 SD for the experimental and 69.6 ± 7.1 SD for the control course. However, on average, combat medic students in the experimental course scored 0.3 SD higher than those in the control course scored ($p = 0.08$). The importance of this trend is readily apparent in a comparison of the percentage of combat medic students who passed the exam; 63% of combat medic students in the experimental course passed the exam, but only 49% of combat medic students in the control course passed ($p = 0.09$). Thus, 14% more of the experimental combat medic graduates achieved national certification, a noteworthy achievement.

Comparison of Grade Point Average to National Registry Exam Score: Was performance in the combat medic course a good estimate of performance on the national certification test? As shown in Figure 1, there was a moderate correlation between GPA and scores on the NREMT, $r = 0.61$ for the experimental and $r = 0.55$ for the control course. For both courses, the GPA was a good predictor of performance on the NREMT. The GPA accounted for 37% and 30%, respectively, of the variance in scores on the NREMT, indicating that the more successful combat medic students were in training, the better their performance was on the NREMT.

Figure 1.



Predictors of Proficiency: Were there personal factors that predicted performance in the combat medic course or on the national certification test? Eight variables were evaluated for their ability to predict GPA or NREMT scores.

(1) Age. Bivariate correlations were calculated between age and GPA and NREMT scores for the experimental and control course combat medic students. Correlations were 0.21 and 0.31, respectively, for the experimental course and –0.10 and 0.22, respectively, for the control course, indicating that age did not predict GPA or NREMT scores.

(2) Rank. Because 68 of 69 combat medic students in the control course were E2, rank could have no predictive value for them (see Table 29). Bivariate correlations were calculated between rank (E1, E2, or E3) and GPA and NREMT scores for the experimental course combat students. Correlations were 0.18 and -0.03, respectively, indicating that rank did not predict GPA or NREMT scores. Separate one-way ANOVAs were used to evaluate differences between ranks for GPA and NREMT scores among combat medic students in the experimental course. There was no significant difference between ranks on either GPA or NREMT ($p > 0.05$).

(3) Educational Level. Bivariate correlations were calculated between educational level and GPA and NREMT scores for the experimental and control course combat medic students. Correlations were 0.31 and 0.31, respectively, for the experimental course and –0.11 and 0.29, respectively, for the control course, indicating that educational level did not predict GPA or NREMT scores. Additional analysis was performed with students divided into two groups on the basis of their educational level (see Table30): (1) high school graduate and (2) some college or college graduates (holders of associate degrees). Separate one-way ANOVAs were used to evaluate differences between educational levels for GPA and NREMT scores. As shown in Table 30, combat medic students who had college experience typically had higher GPA and NREMT scores. The differences between groups were statistically significant for three of the four ANOVAs, indicating that college experience was associated with higher GPA and NREMT scores, especially in the experimental course.

Table 30: Comparison by Educational Levels - Mean Grade Point Average and National Registry Exam Scores of Combat Medic Students

	High School	**College**		
	Mean ± SD	**Mean ± SD**	**F**	**p**
Experimental Course	**(n = 58)**	**(n = 23)**		
GPA	86 ± 4	88 ± 4	F(1,79)=4.74	0.03
NREMT	70 ± 6	75 ± 6	F(1,77)=8.73	0.004
Control Course	**(n = 60)**	**(n = 6)**		
GPA	86 ± 4	84 ± 5	F(1,64)=0.62	*
NREMT	69 ± 7	76 ± 6	F(1,63)=5.93	0.02

*not significant, > 0.05

(4) Science Technical Score. Experimental and control course combat medic students had very similar scores on the Science Technical (ST) test ($p > 0.05$, see Table 31). Bivariate correlations were calculated between ST score and GPA and NREMT scores for the experimental and control course combat medic students. Correlations ranged from 0.32 to 0.44 (see Table 31), indicating that the ST score had minimal predictive value. This finding is not surprising, because the ST score is used as a criterion for entry into the combat medic specialty; applicants must have a score of 95 or higher on the ST test. This fact restricts the range of scores seen and thus limits the viability of the correlation statistic.

Table 31: Correlations between Science Technical Scores and Grade Point Average or National Registry Exam Scores

	ST Mean Score ± Standard Deviation	Correlation between ST and GPA	Correlation between ST and NREMT Score
Experimental Course	108 ± 9	0.38	0.42
Control Course	106 ± 8	0.44	0.32

(5) General Technical Score. Experimental course combat medic students had higher (0.34 SD higher) scores on the General Technical (GT) test then control course combat medic students (see Table 32) ($F(1,143) = 4.37$, $p = 0.04$). Bivariate correlations were calculated between GT score and GPA and NREMT scores for the experimental and control course combat medic students (see Table 32). The GT score was a good predictor of GPA and NREMT scores for combat medic students in the experimental course; GT accounted for 26% of the variance in GPA and 35% of the variance in NREMT scores. These results indicate that combat medic students in the experimental course with high GT scores at the beginning of training had higher GPAs at the end of training and scored higher on the NREMT. The GT score was not as good a predictor of GPA and NREMT scores for combat medic students in the control course. It accounted for 21% of the variance in GPA and only 14% of the variance in NREMT scores.

Table 32: Correlations between General Technical Scores and Grade Point Average or National Registry Exam Scores

	GT Mean Score ± Standard Deviation	Correlation between GT and GPA	Correlation between GT and NREMT Score
Experimental Course	107 ± 9	0.51	0.59
Control Course	104 ± 8	0.46	0.37

(6) School Motivation. Each combat medic student's motivation to do well in school was surveyed twice during the combat medic course (see Appendix B). Scores on the school motivation (SM) pretest showed a wide range of scores from 31 to 74 (out of a possible of 15 to 75), indicating that motivation covered the gamut from poor to excellent at the beginning of training. A 2 x 2 (Courses by Trials) mixed analysis of variance was calculated on the pretest and posttest scores. Experimental and control course combat medic students were not significantly different from each other ($p > 0.05$). However, combat medic students from both courses showed the same small, but statistically significant decrease in motivation during the course (i.e., the main effect of trials was significant, $F(1,146) = 14.38$, $p = 0.0002$, and the interaction was not, $p > 0.05$). Bivariate correlations were calculated between SM scores and GPA and NREMT scores for the experimental and control course combat medic students. As shown in Table 33, correlations ranged from -0.06 to 0.24, indicating that SM scores did not predict GPA or NREMT scores.

Table 33: Correlations between School Motivation Scores and Grade Point Average or National Registry Exam Scores

	SM Mean Score ± Standard Deviation	Correlation between SM and GPA	Correlation between SM and NREMT Score
Pretest			
Experimental Course	57 ± 7	0.11	-0.06
Control Course	59 ± 7	0.12	0.09
Posttest			
Experimental Course	55 ± 7	0.24	0.17
Control Course	57 ± 8	0.14	0.24

(7) Self-directed Learning. Each combat medic student's self-directed learning (SL) behaviors were surveyed twice during the combat medic course (see Appendix C). Scores on the SL pretest showed a wide range of scores from 41 to 144 (out of a possible 24 to 168), indicating that combat medic students covered the gamut at the beginning of training from those who rarely engaged in SL behaviors to those who frequently did engage in them. A 2 x 2 (Courses by Trials) mixed analysis of variance was calculated on the pretest and posttest scores. Experimental and control course combat medic students were not significantly different from each other ($p > 0.05$). However, combat medic students from both courses showed the same small, but statistically significant decrease in self-directed behavior during the course (i.e., the main effect of trials was significant, $F(1,146) = 3.92$, $p = 0.05$, and the interaction was not, $p > 0.05$). Bivariate correlations were calculated between SL scores and GPA and NREMT scores for the experimental and control course combat medic students. As shown in Table 34, correlations ranged from -0.07 to 0.07, indicating that SL scores did not predict GPA or NREMT scores.

Table 34: Correlations between Self-directed Learning Scores and Grade Point Average or National Registry Exam Scores

	SL Mean Score ± Standard Deviation	Correlation between SL and GPA	Correlation between SL and NREMT Score
Pretest			
Experimental Course	119 ± 19	-0.07	0.00
Control Course	121 ± 19	-0.04	0.00
Posttest			
Experimental Course	115 ± 20	0.06	-0.05
Control Course	116 ± 20	0.06	0.07

(8) <u>Cognitive Test of Life-saving Skills</u>. All combat medic students took a 50-item, multiple-choice test on five life-saving skills (LS) at the beginning of the combat medic course (see Appendix D). Scores on this pretest ranged from 28% to 72%. Only one combat medic student out of 150 passed the test (scored 70% or higher), indicating that the overwhelming majority of combat medic students entered the course with essentially no knowledge of life-saving skills. As shown in Table 35, experimental and control course combat medic students had very similar total scores on the test ($p > 0.05$). Furthermore, there was no significant difference between the courses on any of the five subtests ($p > 0.05$, see Table 35). Bivariate correlations were calculated between the LS test and subtest scores and GPA and NREMT scores for the experimental and control course combat medic students. As shown in Table 35, correlations ranged from -0.10 to 0.33, indicating that test scores did not predict GPA or NREMT scores.

Table 35: Correlations between Scores (Percent Correct) on the Cognitive Test of Life-saving Skills and Grade Point Average or National Registry Exam Scores

Cognitive Tests	LS Mean Score ± Standard Deviation	Correlation between LS and GPA	Correlation between LS and NREMT Score
Experimental Course (n = 79)			
Assess Casualty	48 ±16	0.23	0.29
Manage Airway	58 ±17	0.12	0.19
Control Bleeding	56 ±17	-0.08	-0.10
Insert IV	53 ±14	0.10	0.06
Treat NBC Casualty	43 ±15	0.29	0.09
Total Score	52 ± 8	0.25	0.20
Control Course (n = 65)			
Assess Casualty	45 ±15	0.13	0.16
Manage Airway	53 ±16	0.10	0.17
Control Bleeding	54 ±16	0.33	0.11
Insert IV	52 ±16	0.01	0.17
Treat NBC Casualty	44 ±13	0.12	-0.10
Total Score	50 ± 9	0.26	0.20

Course Implementation

Combat Medic Student Evaluations: How did combat medic students perceive the combat medic course? Combat medic students completed a comprehensive end-of-course critique form (see Appendix P). It included items on a variety of issues, including course administration, instructors, teaching methods, testing practices, course outcomes, Combat medic student feedback on five key issues is summarized in the following paragraphs.

(1) Combat Medic Instructors. Combat medic students from both the experimental and control courses gave very positive evaluations of their combat medic instructors. For example, 99% of control course combat medic students and 96% of experimental course combat medic students chose "agree" or "strongly agree" with the statement "instructors were helpful when students had problems understanding course content," (item 74). Similarly, 95% or more of the combat medic students in each course thought that instructors stimulated interest in the course (item 76), did well when explaining how class content related to the real world (item 75) and were positive role models (item 29).

(2) Course Administration. Combat medic students from both the experimental and control courses gave positive evaluations of sensitive aspects of course administration. For example, combat medic students indicated that they were treated fairly regardless of race, nationality, or gender (item 24), they did not believe fraternization between cadre and combat medic students occurred (item 31), and they felt they and their belongings were safe in the barracks (items 109 and 110). Very few combat medic students (7% or less in each course) reported feeling intimidated in class, lab, or study hall (items 125 to 127); there were no meaningful differences between experimental and control course combat medic students in this regard.

However, there were some areas of concern. Combat medic students expressed concern about the interaction of drill and combat medic instructors. Although 94% of combat medic students in the experimental course indicated that drill instructors were positive role models (item 28), only 78% of those in the control course did. Only 13% of the experimental course combat medic students indicated that they saw conflict between drill instructors and combat medic instructors (item 23), but 32% of control course combat medic students did. Similarly, 88% of experimental course combat medic students indicated that there was a good balance in the course between the emphasis on teaching soldier skills and teaching academic skills (item 25), but only 73% of the control course combat medic students did. In the control course, 27% of combat medic students felt that there was too much emphasis on soldier skills (item 26), but in the experimental course, only 3% did.

(3) Combat medic students expressed concern about sleep debt. Although 67% or more of the combat medic students in each course indicated they had the opportunity for seven hours of sleep per night (item 118), only 44% of the control course combat medic students and 35% of the experimental course combat medic students indicated they

were getting enough sleep to be able to stay awake in class (item 119). In a related question, 9% or less of combat medic students in each course indicated that CQ duties interfered with course performance (item 113), but 25% of control course combat medic students and 34% of experimental course combat medic students indicated that fire watch interfered with course performance (item 112).

(4) Classroom Instruction. Combat medic students from both the experimental and control courses gave very positive evaluations of the instructional techniques. Combat medic students thought the combat medic instructors' use of lectures and scenarios helped students learn; that is, 93% of combat medic students in each course rated item 70 on lectures "agree" or "strongly agree" and 100% of combat medic students in each course rated item 69 on scenarios "agree" or "strongly agree." They also indicated on items 62 and 63 that an appropriate amount of time was spent in lecture and small group activities. There was one area of concern. Only 64% of control course combat medic students and 36% of experimental course combat medic students believed that 10 weeks was sufficient time for the course (item 21).

(5) Lab and Field Instruction. Combat medic students from both the experimental and control courses gave very positive evaluations of the practical exercises. Items 42 and 44 concerning the role of the combat medic instructor in labs were highly rated (90% or more of combat medic students in each course chose "agree" or "strongly agree"). Items 35, 36, 39, and 46 concerning the adequacy of supplies, equipment, and time for labs received high ratings. Although, field training exercises were positively rated, there were substantial differences between experimental and control course combat medic students. On item 48, only 7% of control course combat medic students felt that time was inadequate, but 26% of experimental course combat medic students did. On item 50 only 4% of control course students felt that equipment was inadequate, but 24% of experimental course combat medic students did. On item 51 only 2% of control course combat medic students felt that supplies were inadequate, but 29% of experimental course combat medic students did.

(6) Perceptions of Proficiency. Combat medic students from both the experimental and control courses gave very positive evaluations of the course. The majority of combat medic students (73% of control course students and 84% of experimental course students) found it challenging (item 121), and virtually all of the combat medic students (96% or more in each course) believed they learned important and useful skills (item 130). Items 99 to 104 asked combat medic students to affirm their proficiency on life-saving skills. As shown in Tables 36 and 37, combat medic students were confident in their newly acquired abilities. There were no meaningful differences between experimental and control course combat medic students. Combat medic students appeared to be more confident than experienced combat medics (compare Tables 36 & 37 to Table 12).

Table 36: Experimental Combat Medic Course - Combat Medic Students' Ratings of their Proficiency on Life-saving Skills (n = 81)

Skills	Missing	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Assess Casualty	0%	1%	0%	5%	56%	38%
Manage Airway	1%	1%	0%	2%	49%	46%
Control Bleeding	0%	1%	0%	4%	36%	59%
Insert IV	0%	1%	0%	4%	36%	59%
Treat NBC Casualty	0%	1%	6%	25%	48%	20%

Table 37: Control Combat Medic Course – Combat Medic Students' Ratings of their Proficiency on Life-saving Skills (n = 67)

Skills	Missing	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Assess Casualty	0%	0%	0%	1%	46%	52%
Manage Airway	0%	0%	0%	0%	42%	58%
Control Bleeding	0%	0%	0%	3%	37%	60%
Insert IV	1%	1%	1%	12%	34%	49%
Treat NBC Casualty	1%	1%	0%	18%	49%	30%

Combat Medic Instructors: What was the demographic composition of the combat medic instructor sample? Demographic questions were posed to combat medic instructors (n = 14) on items 103 to 120 on the end-of-course critique form (see Appendix Q). Combat medic instructors were promised confidentiality when they agreed to complete the form. Providing detailed demographic information on such a small group might compromise confidentiality, therefore only general data will be presented. All combat medic instructors were male. Combat medic instructors in the control course were of Hispanic and Caucasian ethnicities. While those in the experimental course were of African, Caucasian, and other minority ethnicities. Combat medic instructors in the control course ranged in age from 34 to 38. While those in the experimental course ranged in age from 30 to 42. The majority of combat medic instructors in both the control and experimental courses were E6s, although both courses also had combat medic instructors who were E7s. All of the combat medic instructors had some college experience. None of the experimental course combat medic instructors had bachelor's degrees, but some control course combat medic instructors did. A small percentage of combat medic instructors in the control course had emergency medical technician (EMT)

experience beyond the EMT-Basic level; none in the experimental course did. There were combat medic instructors in both courses who had three to five years' experience teaching in the combat medic program at Fort Sam Houston.

Combat Medic Instructor Evaluations: How did combat medic instructors perceive the combat medic course? Combat medic instructors, seven from the control course and seven from the experimental course, completed a comprehensive end-of-course critique form. It included items on a variety of issues, including course administration, students, teaching methods, testing practices, course outcomes, peers, and classroom conditions. Combat medic instructor feedback on four key issues is summarized in the following paragraphs.

(1) Course Administration. Combat medic instructors from both the experimental and control courses gave positive evaluations of course administration. They believed that being a combat medic instructor was a rewarding job (86% of control course combat medic instructors and 100% of experimental course combat medic instructors chose "agree" or "strongly agree" on item 62). Unlike combat medic students, instructors rarely indicated that that they saw conflict between drill instructors and combat medic instructors (item 11); 14% of control course combat medic instructors believed there was conflict, but none of the experimental course combat medic instructors did. Similarly, 86% of experimental course combat medic instructors believed that communication was good among combat medic instructors, drill sergeants, and unit leaders (item 12), but only 43% of control course combat medic instructors did. On related questions, 85% of experimental course combat medic instructors indicated that there was a good balance in the course between the emphasis on teaching soldier skills and teaching academic skills (item 8), but only 43% of the control course combat medic instructors did. In the control course, 57% of combat medic instructors felt that there was too much emphasis on soldier skills (item 9), but in the experimental course, 0% did.

(2) Classroom Instruction. Combat medic instructors from both the experimental and control courses gave very positive evaluations of the instructional techniques. They thought question and answer sessions (item 57), scenarios (item 58), and lectures (item 59), were all used effectively (86% to 100% of combat medic instructors in each course chose "agree" or "strongly agree"). There was one area of concern. Only 29% of combat medic instructors in each course believed that 10 weeks was sufficient time for the course (item 3).

(3) Lab and Field Instruction. Combat medic instructors indicated that the combat medic student to combat medic instructor ratio in labs was satisfactory (item 20) and that supplies (item 22), equipment (items 21 and 23), and time (item 24) for labs were adequate, although control course combat medic instructors tended to be less positive than experimental course combat medic instructors. In contrast, items 29 to 32, which asked similar questions about the field training exercises, were not as positively rated and combat medic instructors from the experimental course were substantially more negative in their ratings than control course combat medic instructors. This trend matches that seen with combat medic students.

(4) Perceptions of Proficiency. Combat medic instructors in the experimental course strongly endorsed the statement that the course standards produced proficient combat medics; 100% of them chose "agree" or "strongly agree." Combat medic instructors in the control course did not endorse this item as strongly; only 68% chose "agree" or "strongly agree," and almost a third chose "disagree." Items 48 to 52 asked combat medic instructors to affirm combat medic student proficiency on core life-saving skills. As shown in Tables 38 and 39, combat medic instructors were not always confident that combat medic students were completely proficient. Control course combat medic instructors were more conservative in their ratings than experimental course combat medic instructors were; none of the control course combat medic instructors ever chose "strongly agree." Table 40 directly compares the combat medic students' self evaluations with the combat medic instructors' evaluations of students. Again, the most notable outcome is the fact that control course combat medic instructors gave lower ratings.

Table 38: Experimental Combat Medic Course Instructors' Ratings of Combat Medic Student Proficiency on Life-saving Skills (n = 7)

Skills	Missing	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Assess Casualty	*	*	*	*	*	*
Manage Airway	0%	0%	0%	29%	57%	14%
Control Bleeding	0%	0%	0%	0%	86%	14%
Insert IV	0%	0%	0%	0%	100%	0%
Treat NBC Casualty	0%	0%	14%	14%	57%	14%

* not rated

Table 39: Control Combat Medic Course Instructors' Ratings of Combat Medic Student Proficiency on Life-saving Skills (n = 7)

Skills	Missing	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Assess Casualty	*	*	*	*	*	*
Manage Airway	0%	0%	14%	29%	57%	0%
Control Bleeding	0%	0%	0%	0%	100%	0%
Insert IV	0%	14%	0%	57%	29%	0%
Treat NBC Casualty	0%	0%	43%	43%	14%	0%

* not rated

Table 40: Comparison of Combat Medic Student and Instructor Ratings of the Proficiency of Combat Medic Students on Life-saving Skills

	Experimental Course		**Control Course**	
Skills	Combat Medic Students rating themselves as proficient ("agree" or "strongly agree") (n = 81)	Combat Medic Instructors rating students as proficient ("agree" or "strongly agree") (n = 7)	Combat Medic Students rating themselves as proficient ("agree" or "strongly agree") (n = 67)	Combat Medic Instructors rating students as proficient ("agree" or "strongly agree") (n = 7)
Assess Casualty	98%	*	98%	*
Manage Airway	95%	71%	100%	57%
Control Bleeding	95%	100%	97%	100%
Insert IV	95%	100%	83%	29%
Treat NBC Casualty	68%	71%	79%	14%

* not rated

Classroom Observations: Were there observable differences between experimental and control course instruction? Members of the research staff attended a sample of classroom presentations, practical exercises, cognitive testing sessions, and core life-saving hands-on skill testing sessions in order to quantify the process variables involved in the courses. Data from their observation checklists are summarized in the paragraphs below.

(1) Classroom Presentations. Observation checklists (see Appendix R) were completed on 44 classroom presentations: 22 from the control course and 22 from the experimental course. The two courses were very similar. For example, in 95% of the control classes sampled and 100% of the experimental classes sampled, the combat medic instructors used more than one method of instruction, such as, lecture, 35 mm slides, and discussion. In 67% of the control and 67% of the experimental classes observed, the combat medic instructors involved the class by asking open-ended questions (item 17) and in 47% of the control and 57% of the experimental classes observed, the combat medic instructors involved the class by asking questions that required the student to make a decision (item 25). Combat medic instructors were comfortable answering combat medic students' questions (item 22) in 67% of the control and 52% of the experimental classes observed. Combat medic instructors were observed speaking in a monotone for 10 minutes or more (item 15) in 19% of the control classes sampled, but not in any of the experimental classes sampled. Combat medic instructors read from a lesson plan for 10 minutes or more (item 16) in over a third of the classes observed (38% of control and 33% of experimental). Combat medic students fell asleep in class in 43% of the control and in 48% of the experimental classes observed.

(2) Practical Exercises. Observation checklists (see Appendix R) were completed on 23 core life-saving hands-on skills classes: 13 from the control course and 10 from the experimental course. One of the most obvious differences between the two courses was the combat medic instructor to student ratio. In the control course the ratio exceeded 1:16 in 69% of the classes observed; in the experimental course, it never exceeded a 1:14 ratio in the classes observed. In the experimental course, combat medic students were broken into groups in 80% of the classes observed, but the groups contained 11 to 14 students each. In the control course combat medic students were broken into groups in only 69% of the classes observed, but when groups were used, the groups were composed of only 2 to 4 students. In the experimental classes observed, the combat medic instructor started 100% of the classes with an overview of the objectives (item 1), but this took place in only 77% of the control classes observed. Similarly, in the experimental classes observed, combat medic instructors started 100% of the classes with a walk-through demonstration of the skill (item 3); this took place in only 46% of the control classes observed. Combat medic instructors provided immediate feedback on combat medic student performance (item 12) in 70% of the experimental classes observed; this took place in only 46% of the control classes observed. The two courses were not different in terms of training resources. The equipment to combat medic student ratio and the supply to combat medic student ratio could not be evaluated because these data were not recorded in 30% to 46% of the classes. However, the answers to items 21 and 22 suggest that whenever supplies and equipment were needed combat medic students in both courses had access to them.

(3) Cognitive Testing Sessions. Observation checklists (see Appendix R) were completed on 5 cognitive testing sessions: 2 from the control course and 3 from the experimental course. The small number of observations makes it difficult to compare courses, but testing sessions were very similar in the two courses. For example, in both experimental and control sessions, combat medic instructors always gave directions before starting the test (item 1) and always spaced combat medic students out to prevent them from seeing each other's tests (item 2). Combat medic instructors were respectful and answered combat medic students' questions (items 5 and 6). No combat medic instructors in either class gave immediate feedback on student performance (items 7 and 8).

(4) Core Life-saving Hands-on Skill Testing Sessions. Observation checklists (see Appendix R) were completed on 8 core life-saving hands-on testing sessions: 7 from the control course and 1 from the experimental course. It is impossible to compare courses, because only one observation was done in the experimental course. In the control sessions, combat medic instructors always gave directions before starting the test (item 1). Combat medic instructors were not respectful of combat medic students in 43% of the control course sessions (item 3). In the control sessions, combat medic instructors gave immediate feedback on combat medic student performance (item 5) and provided cues to students during testing (item 6). Supplies, equipment, and environmental settings were not optimal in control sessions (items 7 to 15).

Qualitative Results of Phase II

The combat medic students were asked to respond to the following question "List three aspects of the 91B10 course that you would like to see changed?" In the experimental course 100% (81/81) combat medic students enrolled in the courses answered this question. In the control course 100% (67/67) of the combat medic students who were administered the evaluation provided written responses to this question.

Combat medic students in the experimental course wanted to make changes to the course. Forty-two percent (34/81) of the students wanted to add hours to field activities. The field activities of interest were North American Treaty Organization (NATO) track exercises, litter carries, and completing medical evacuation (MEDIVAC) requests. Thirty-five percent (28/81) wanted the course to be longer than ten weeks. Thirty percent (21/81) of the combat medic students wanted to add more clinical time to the course. They thought the exposure to patients was helpful in learning to apply their medical knowledge. Seventeen percent (14/81) wanted to add more hands-on activities such as night IV sticks on an IV arm, vehicle extrication, and field training. Seventeen percent (14/81) desired more study time. Fourteen percent 14% (8/81) of the combat medic students wanted more hours on critical topics and less time on nice-to-know topics.

The combat medic students in the control course recommended similar changes. Twenty-two percent (15/67) of these combat medic students wanted to add hours to the course for more hands-on practice of medical skills. Eighteen percent (12/67) of the students wanted to change teaching methods used by the instructors. Thirteen percent (9/67) stated the course was too short at ten-weeks. Twenty-two percent (15/67) did not want to make any changes to the existing course.

The second question that was asked of the combat medic students was "List the best three aspects or things about the 91B10 course." This question generated responses from both the experimental course and control course combat medic students about instructors, hands-on teaching, clinical rotations, and learning.

Combat medic students in the experimental course liked the Cadre and Drill Instructors. Seventy-five percent (61/81) of students stated instructors were knowledgeable, enthusiastic, caring, understanding, helpful, cooperative, available, and professional. These students also liked the small instructor to student ratio in the lab setting. Seventy-two percent (58/81) believed the hands-on environment helped them learn. Thirty-seven percent (30/81) liked the NATO track exercises, the litter carry training, and the FTX. A third of combat medic students (26/81) believed the clinical rotations gave students exposure to patients, which facilitated learning medical skills. A quarter of the combat medic students, (19/81), liked small group work. The comments regarding small group work emphasized that small group work provided greater student involvement in the topic and positive interaction with other students. And finally, 19% (15/81) of the combat medic students thought the course was interesting and challenging. In particular, they thought important areas addressed in the course were how to save lives, EMT skills, and litter-carry training.

The combat medic students in the control group also responded positively to their course. The top comment from this group of combat medic students was about the instructors. Sixty-seven percent (40/67) of the combat medic students stated instructors were knowledgeable, caring, helpful, and friendly. Thirty-nine percent (26/67) liked the hands-on skills training, especially CPR and starting an IV. Thirty percent (22/67) of the combat medic students found the course interesting and challenging. The ability to save lives had special meaning to this group, too. The last comment was about the FTX experience; 25% (17/67) of the combat medic students liked the FTX and would like it to be longer.

The combat medic instructor written evaluation could not be analyzed. There was a very small sample and the answers were not relevant to the questions posed. As a result, during the FTX phase of training instructors noticed that combat medic students from the experimental combat medic course seemed more prepared than those from the control combat medic course.

Conclusions

Combat Medic Student Performance

- The mean GPA was similar in the two courses.
- Combat medic students in the experimental course scored higher on the NREMT than those in the control course.
- There was a moderate correlation between GPA and scores on the NREMT, indicating that the more successful a combat medic student was in training, the better his/her performance was on the NREMT.
- Age did not predict GPA or NREMT scores.
- There was no significant difference among ranks on either GPA or NREMT.
- Combat medic students who had college experience had higher GPA and NREMT scores.
- The ST score did not predict GPA or NREMT scores well.
- Combat medic students in the experimental course scored significantly higher on the GT test those in the control course. The GT score was a good predictor of GPA and NREMT scores for combat medic students in the experimental course. The GT score was not as good a predictor of GPA and NREMT scores for combat medic students in the control course.
- Experimental and control course combat medic students were not significantly different from each other in level of school motivation. Combat medic students from both courses showed a statistically significant decrease in motivation during the course. SM scores did not predict GPA or NREMT scores.
- Experimental and control course combat medic students were not significantly different from each other in level of self-directed learning behavior. Combat medic students from both courses showed a statistically significant decrease in self-directed learning behavior during the course. SL scores did not predict GPA or NREMT scores.

- Only one combat medic student out of 150 passed the written pretest of life saving skills, indicating that the overwhelming majority of combat medic students entered the course with essentially no knowledge of life-saving skills. Experimental and control course combat medic students had very similar total scores on the test. Test scores did not predict GPA or NREMT scores.
- Observations of classroom presentations and cognitive tests indicated that the two courses were very similar.
- Observations of practical exercises indicated that the courses were very different.
- 42% of the combat medic students in the experimental course wanted more hours for field activities such as NATO track activities and litter carry training.
- 35% of the combat medic students in the experimental course wanted the combat medic course to be longer than ten-weeks.
- 30% of the combat medic students in the experimental course wanted more hours for clinical rotations.
- 17% of the combat medic students in the experimental course wanted more hands-on activities such as night IV sticks on an IV arm and vehicle extrication.
- 14% of the combat medic students in the experimental course wanted to spend more time on critical topics and less time on nice to know topics.
- Combat medic students in the experimental course said what they liked best about the course:
    - were the cadre and DIs. 75%
    - was the hands-on practice. 72%
    - was the field training. 37%
    - were the clinical rotations. 32%
    - was the small group work. 23%
    - were the interesting and challenging aspects of the course. 19%
- Combat medic students in the control course wanted:
    - more hands-on practice of life-saving skills. 22%
    - to change instructional methods. 18%
    - the combat medic course to be longer than 10-weeks. 13%
- 67% of combat medic students in the control course said what they liked best about the course:
    - were the combat medic instructors.
    - was practicing the hands-on life saving skills. 39%
    - were the interesting and challenging aspects of the course. 30%
    - was the field training. 25%

Course Implementation

- Combat medic students from both the experimental and control courses gave very positive evaluations of their combat medic instructors.
- Combat medic students from both the experimental and control courses gave positive evaluations of sensitive aspects of course administration.
- Very few combat medic students in either course reported feeling intimidated in class, lab, or study hall.

- Combat medic students in the control course indicated that they saw conflict between drill instructors and combat medic instructors.
- Combat medic students in the control course felt that there was too much emphasis on soldier skills.
- Combat medic students in both courses indicated they were not getting enough sleep to be able to stay awake in class.
- Combat medic students in both courses gave very positive evaluations of the instructional techniques.
- Combat medic students in the experimental course indicated that 10 weeks was not sufficient time for the course.
- Combat medic students in both courses gave very positive evaluations of the practical exercises.
- Combat medic students in the experimental course indicated that time, supplies, and equipment for field training exercises were not adequate.
- Combat medic students in both courses gave very positive evaluations of the course. The majority of students found it challenging and virtually all of the students believed they learned important and useful skills.
- Combat medic students were confident that they were proficient in life-saving skills.
- Combat medic instructors in both courses believed that being an instructor was a rewarding job.
- Combat medic instructors in both courses gave positive evaluations of course administration.
- Combat medic instructors in the control course indicated that there were some problems with communication among combat medic instructors, drill sergeants, and unit leaders.
- Combat medic instructors in the control course indicated there was too much emphasis on soldier skills.
- Combat medic instructors in both courses gave very positive evaluations of instructional techniques.
- Combat medic instructors in both courses believed that 10 weeks was not sufficient time for the course.
- Combat medic instructors in the experimental course were concerned that there were not enough time, supplies, and equipment for the field training exercises.
- Combat medic instructors in the experimental course strongly endorsed the statement that the course standards produced proficient combat medics.
- Combat medic instructors in both courses indicated combat medic students were less than completely proficient on specific life-saving skills.

Discussion

The "experimental" 91B10 combat medic course was equivalent in length to and covered the same content as the traditional "control" 91B10 combat medic course. The experimental course was designed to be different from the control course in two significant ways. First, instructors in the experimental course were asked to teach in an interactive manner that engaged and challenged students as adult learners. Second, time

spent in laboratory instruction and hands-on practice was increased and integrated throughout the instructional process in the experimental course. As a consequence, Phase II of this study included assessments of process, student, and outcome variables. Process variables measured the degree to which the experimental and control courses differed in implementation. Student variables measured the degree to which student performance was influenced by their personal histories. Outcome variables measured the degree to which student performance was influenced by the differences in the courses.

Analysis of student evaluation (process) data indicated that combat medic students in both courses were equally satisfied with their instructors and with the instructional methods. Analyses of the observation checklist (process) data from classroom presentations also indicated that the two courses were not very different. They shared several positive characteristics. For example, experimental and control course instructors were equally likely to use multimedia presentations, ask students open-ended questions, and ask questions that required students to make decisions. They also shared some negative characteristics. For example, experimental and control course instructors were equally likely to read from the lesson plan and experimental and control course students were equally likely to fall asleep in class.

In contrast, analyses of the observation checklist (process) data from the practical exercises indicated that the two courses were substantially different in this regard. The instructor-to-student ratios in the experimental course were smaller than in the control course and classes were divided into smaller groups more often. However, when used, groups were smaller in the control group. Instructors in the experimental course started each lab with an overview of its objectives and a walk-through demonstration of the skill to be taught. Instructors in the control courses were substantially less likely to use this approach. Instructors in the experimental course were more likely than control course instructors to give students immediate feedback on their performance in labs.

Student variables are potential moderators of outcome variables. Combat medic students were randomly selected for participation in this study from the eligible student population. This practice was designed to obtain similar distributions of student variables in both courses, so that differences between courses in outcome variables could be straightforwardly interpreted. As a result, combat medic students in the two courses had similar distributions of gender, ethnicity, ST scores, school motivation scores, self-directed learning scores, and pretest scores. However, combat medic students in the experimental course were slightly older, were somewhat better educated, and had slightly higher GT scores, and a wider rank distribution.

Two key outcome variables were measured in Phase II, the end-of-course GPA and the score on the NREMT. Only two student variables, GT score and educational level, had predictive ability for these outcome variables. Each had a similar modest predictive ability for both groups.

More surprising was that neither school motivation nor self-directed learning had any predictive ability for these outcome variables (in either course), especially given that

there was a wide range of motivation among combat medic students (in both courses). This finding combined with the significant drop in motivation seen during both courses suggested that individual levels of motivation were simply not relevant to academic performance in the either the experimental or the control courses. This finding also suggested that the experimental course was not presented in strict accordance with adult learning principles and that the standard for passing was too low. There is, of course, a positive aspect to this phenomenon. When the eligible population of recruits is small, instructional resources are constrained, time is limited, and the consequences of attrition are high, it is cost effective to have a course unaffected by varying levels of student motivation.

The GPA of combat medic students in the experimental course was very similar to that of combat medic students in the control course. This finding was not surprising for three reasons. First, the experimental and control courses did not differ in content nor did they differ in the level of material presented. Second, the grade point average was computed predominantly from grades on written, cognitive tests of information covered in classroom presentations. Process data indicated that classroom presentations were very similar in both courses. Third, both courses were taught to the same minimum standard of performance for passing.

The NREMT scores of combat medic students in the experimental course were slightly higher than those of combat medic students in the control course. This difference resulted in a 14% higher pass rate for the combat medic students in the experimental course. This finding suggested that the differences between the two courses in the manner in which practical exercises were taught might have given combat medic students who attended the experimental course a better grasp of the fundamentals and how to apply them in various situations.

The correlation between GPA and NREMT was encouraging. It indicated (a) that the content of both courses appropriately prepared students for skills essential to the technician's practice of emergency medicine and (b) that relative performance in both courses was systematically linked to relative mastery of the material. That is, students who excelled in the courses had a better grasp of the fundamentals than students who simply passed the courses. This phenomenon suggested that raising standards in the combat medic course could have a positive impact on the level of readiness and overall quality of its graduates.

In summary, process data suggested that the experimental course was not implemented in strict accordance with the adult learning model. However, the way in which hands-on practice was integrated into the curriculum of the experimental course was congruent with the adult learning model. As would be expected, therefore, combat medics who were trained under the experimental model were more likely to pass the NREMT exam than combat medics who were trained under the traditional model used in the control course. The practical impact of this performance difference was measured in Phase III.

PHASE III: SUSTAINMENT TRAINING PACKAGE

New and experienced combat medics' performance can be placed on a continuum. At one end is proficiency in life-saving measures; at the other end is skill degradation and loss of proficiency in life-saving measures. Phase III measured the degree of combat medics' skill performance. Additionally, combat medics were surveyed about their perceptions of knowledge and performance of four life-saving skills, sustainment training opportunities, resources available for medic training, and readiness to perform the combat medic mission.

Design

A prospective experimental design with repeated measures was utilized during this phase of the study. Experienced and new combat medics at Fort Hood, TX used a researcher-designed, stand-alone, multi-sensory, unit sustainment-training package. Experienced and new combat medics at Fort Carson, CO; Fort Bragg, NC; and Fort Lewis, WA received their usual medic training.

The purpose of repeatedly measuring four core life-saving skills at six and nine months post baseline was to measure skill and knowledge changes over time. The first measure of knowledge and performance of the four core life-saving skills was measured in Phase I for experienced combat medics. The second measure of knowledge and performance of the four core life-saving skills was approximately six months following the first measurement. Experienced combat medics had only two measurement points (Fall, 1998 and Spring, 1999), because these combat medics at the four study sites were highly mobile and follow-up past six months was not feasible. The first measure of knowledge and performance of the four core life-saving skills of new combat medics was measured at the beginning of 91B10 training. The new combat medic had follow-up measures four and seven months after graduation from 91B10 training; i.e., at six and nine months post baseline.

Experimental Sustainment-Training Program

The development of the Experimental Sustainment-Training Program (Appendix T) was a joint effort between the AMEDD Center & School, Center for Healthcare Education & Studies, and III Corps, Fort Hood, TX. The Experimental Sustainment-Training Program was designed to mirror the experimental course in Phase II. Special attention was given to ensure adult learning principles were integrated based on Grow's model (1991). The package had several features: (1) distance training modules; (2) a flexible, portable structure; (3) a structured, competency-based approach; (4) self-directed modules; (5) a multi-sensory approach to training; and (6) a hands-on approach to training. Each module of the program had learning objectives, required activities to be accomplished, a skills checklist, and a self-posttest in order to give the combat medic immediate performance feedback. It was designed to be a flexible, stand-alone program. An instructor on-site was not required and combat medics trained according to unit needs.

The study had three liaison NCOs who tracked combat medics to facilitate their training opportunities; the liaison's role was not to re-teach combat medic content. The training schedule set up weekly training for one hour, but was flexible enough to be adjusted to meet unit-training needs. Another feature of the package's flexibility was its application to varying group sizes; one combat medic or a small group of combat medics could work on a module at one time.

An important feature of this program was the structure and competency-based approach to training. When combat medics worked through the learning objectives, required activities to be accomplished, a skills checklist, and a self-posttest they knew what was expected for competent performance.

Modular design facilitated combat medic training that was self-directed. By assuming responsibility for training, the combat medic followed the directions for each module, met the module objectives by reviewing the content, practiced a given set of life-saving skills, and completed the module by performing the posttest all without assistance. A multi-sensory approach to learning gave combat medics choices. Combat medics could choose to learn about core life-saving content by reading a book, using a computer simulation, watching a video, and/or by hands-on experience with the mannequins. The variety of learning methods offered had the capacity to appeal to all types of learners because they, themselves, selected the medium in which they felt most comfortable and could learn from best.

The final feature of the program was the hands-on performance of core life-saving skills. Not only did combat medics refresh their knowledge base regarding the core life-saving skills, but they also practiced each skill repeatedly during sustainment training. Combat medics practiced on mannequins and manipulated the equipment in order to perform the life-saving skill. This type of practice was especially important to those combat medics assigned to units that have limited opportunities for patient contact.

Sample

All of the experienced combat medics tested in Phase I of the study that were available were tested at six months (n=284). This was the last data collection point for experienced combat medics.

Before leaving Fort Sam Houston, TX, combat medic students (n=150) were placed in either the experimental or control sustainment-training group, based on duty assignment. With the assistance of the U. S. Army Enlisted Assignment Branch, new combat medics were assigned to the four study sites.

Data Collection

The data collection procedures used in Phase III were identical to those used in Phase I. A total of two evaluators collected data during Phase III. Prior to any data collection, inter-rater agreement was established on the four core life-saving skills (Table

4) and the co-investigator reviewed the skill criteria, skill scenarios, and evaluator's script with the project director. The co-investigator and project manager conducted the data collection. One evaluator tested three stations and the other evaluator tested one station.

Consistency with Phase I was maintained for station set-up, life-saving skill scenarios, evaluator scripts, and the two core life-saving skill sheets for trauma assessment and bleeding control/shock management. Phase III data collection plan for experienced combat medics is shown in Table 41. Phase III data collection plan for new combat medics is shown in Table 42.

Table 41: Phase III - Summary of Measurements – Experienced Combat Medics

Respondent	Instrument	Source/Admin Time
Experienced Combat Medic	a) Experienced Combat Medic Questionnaire	30 minutes
	b) Life-saving Assessment-Cognitive Test	30 minutes
	c) Performance Skill Sheets for the Core Life-saving Skills	40 minutes
	d) School Achievement-Motivation Survey	10 minutes
	e) Oddi Self-Directed Continual Learning Inventory	10 minutes

Table 42: Phase III - Summary of Measurements - New Combat Medics

Respondent	Instrument	Test Intervals
New Combat Medic	a) New Combat Medic Questionnaire	Initial testing
	b) Assessment of Life-saving Cognitive Test	Six and nine months post baseline
	c) Performance Skill Sheets for the Core Life-saving Skills	Six and nine months post baseline
	d) School Achievement-Motivation Survey	Six and nine months post baseline
	e) Oddi Self-Directed Continual Learning Inventory	Six and nine months post baseline

Sample Attrition

At baseline, 347 experienced combat medics completed questionnaires and hands-on skill testing. At the six-month follow-up, the sample decreased to 284 experienced combat medics (see Table 43). The attrition rate for the experienced combat medic was 18% (see Table 44).

Table 43: Attrition Rates by Site, Phase and Class

	Phase 1	Phase 3		Phase 2	Phase 3		Phase 3	
	Experienced Medics			New Medics Class 1				
Site	Baseline Sample	6 month Sample		Graduation Sample	6 Month Sample		9 Month Sample	
Fort Hood	127	107	16%	49	44	10%	41	8%
Fort Bragg	71	55	22%	17	15	11%	14	6%
Fort Lewis	73	59	18%	13	12	7%	11	8%
Fort Carson	76	63	17%	15	10	33%	7	30%
				New Medics Class 2				
				Graduation Sample	6 Month Sample		9 Month Sample	
For t Hood				23	19	17%	18	5%
Fort Bragg				14	11	21%	11	0%
Fort Lewis				10	10	0%	9	10%
Fort Carson				9	6	33%	5	10%

Table 44: Attrition Rates by Site for Experienced Combat Medics

Site	**Sample**	
Fort Hood	107/127	16%
Fort Bragg	55/71	22%
Fort Lewis	59/73	18%
Fort Carson	63/76	17%
Total	284/347	18%

At the completion of the first iteration (Class 1) of the combat medic course, 94 combat medic students graduated and were assigned to one of the four study sites. At the completion of the second iteration (Class 2) of the combat medic course, 56 combat medic students graduated and were assigned to one of four study sites (Table 43). In Phase III of the study 127 new combat medics completed the questionnaires and hands-on testing (Table 43). The attrition rate for new combat medics was 15% (Table 45).

Table 45: Attrition Rates by Site for New Medics

Site	Sample	
Fort Hood	63/72	13%
Fort Bragg	26/31	16%
Fort Lewis	22/23	4%
Fort Carson	16/24	33%
Total	127/150	15%

The operational tempo for the four sites was high. Some of the sample attrition was due to the Kosovo/Bosnia conflict. Other factors that contributed to attrition were separations from service, by name tasking requests, convalescent leaves, and end of enlistments.

Quantitative Results of Phase III

Comparison of Performance across Groups

Combat medics from Phases I and II were retested in Phase III (six months after baseline testing). This sample of combat medics was divided into three groups. The first group, Experienced Medics group (EM), was composed of experienced combat medics who had been tested in Phase I, i.e., combat medics with at least one year of experience. The second group, Control Training group (CT), was composed of new combat medics who had graduated four months earlier from the control combat medic course. The third group, Experimental Training group (ET), was composed of new combat medics who had graduated four months earlier from the experimental combat medic course. The primary purpose of this phase of the project was to compare the performance of the three different groups.

Demographics: What was the demographic composition of the Phase III sample of experienced combat medics? Table 46 shows the distribution of responses to the demographic questions posed to experienced combat medics in Phase III (see Appendix A). A comparison of Table 7 with Table 46 suggests that attrition from Phase I to Phase III was evenly distributed across demographic categories. The Phase III EM sample (n= 284) was virtually identical to the Phase I EM sample (n=347); those differences that did occur were consistent with the fact that the samples were six months older and more experienced.

Table 46: Demographics of Phase III Sample of Experienced Combat Medics (n=284)

Variables	% of Sample	Variables	% of Sample
Total Military Medical Experience		**Age**	
less than 1 year	11%	18 to 20	29%
1 to 5 years	86%	21 to 25	53%
6 to 9 years	2%	26 to 36	18%
10 or more years	<1%	37 to 46	0%
missing	0%	missing	0%
Total Experience in TOE		**Gender**	
less than 1 year	17%	male	70%
1 to 5 years	80%	female	30%
6 to 9 years	3%	missing	0%
10 or more years	<1%		
missing	0%		
Total Experience in TDA		**Ethnicity**	
less than 1 year	79%	Caucasian-American	52%
1 to 5 years	21%	African-American	24%
6 to 9 years	0%	Hispanic-American	13%
10 or more years	0%	Other	10%
missing	<1%	missing	1%
Current Assignment		**Civilian Educational Level**	
TOE	89%	High School	43%
TDA	11%	Some College, no degree	43%
missing	0%	Some College, license	7%
Rank		Associate's degree	4%
E2 to E4	99%	Undergraduate degree	2%
E5 to E7	<1%	Advanced degree	<1%
E8 to E9	0%	missing	1%
O1 to O3	0%		
missing	<1%		

Demographics: What was the demographic composition of the Phase III sample of new combat medics? Table 47 shows the distribution of responses to the demographic questions posed to new combat medics in Phase III (see Appendix U). A comparison of Table 47 with Table 29 suggests that attrition from Phase II to Phase III was evenly distributed across demographic categories. The Phase III ET sample (n=66) and CT sample (n=61) were virtually identical to the Phase II ET sample (n=81) and CT sample (n=69); those differences that did occur were consistent with the fact that the sample was six months older and more experienced.

There was one change in the CT sample that was noteworthy. In Phase II, none of the combat medic students were E1, however, in Phase III, 10% were E1. It may be that these new combat medics were reduced in rank related to discipline issues or it may be that Phase II data were inaccurate. In Phase II, data on combat medic students' ranks were taken from faculty records, but in Phase III, the new combat medics provided the data on the New Graduate 91B10 Medic Questionnaire (see Appendix U).

Table 47: Demographics of Phase III Sample of New Combat Medics

Variables	Experimental Training Group (n = 66)	Control Training Group (n = 61)
Age		
17 to 20	79%	90%
21 to 25	20%	10%
26 to 34	1%	0%
missing	0%	0%
Gender		
male	56%	54%
female	44%	46%
missing	0%	0%
Ethnicity		
Caucasian-American	47%	44%
African-American	27%	23%
Hispanic-American	14%	23%
Other	11%	10%
missing	1%	0%
Civilian Educational Level		
High School	71%	85%
Some College, no degree	21%	15%
Some College, license	6%	0%
Associate's degree	2%	0%
Undergraduate degree	0%	0%
Advanced degree	0%	0%
missing	0%	0%
Rank		
E1	6%	10%
E2	50%	82%
E3	42%	8%
E4	1%	0%
missing	0%	0%

Performance: How well did medics do on the hands-on tests of core life-saving skills? Combat medics were administered hands-on tests of their ability to perform four core life-saving skills. Each hands-on test consisted of 12 to 40 subtasks. Performance on each subtask was scored Pass or Fail. Each subtask was coded as a critical criterion or not. Each combat medic received two scores (1) a simple score representing the percentage of subtasks passed and (2) a critical criteria score representing the percentage of subtasks and the percentage of critical criteria passed. This finding is illustrated in Figure 2, which shows the differences among groups in the percentage of combat medics in the field who were capable of passing core life-saving skills hands-on tests. Differences among groups were statistically significant on all four tests; $\chi 2$ (2) values ranged from 6.04 to 21.77, $p \leq 0.05$. Fourth, only a few combat medics in the field could pass a hands-on test when they were judged according to a critical criteria standard like that used by the National Registry of Emergency Medical Technicians. Even when this standard was used, the ET group performed as well as or better than the EM group and consistently better than the CT group. Furthermore, these follow-up data confirmed Phase I findings that the general state of knowledge and performance of core life-saving skills among combat medics was substandard (i.e., a substantial number of medics could not pass the test). Table 48 provides the breakdown of performance by skill area for each of the three groups. Four facts were readily apparent from these data. First, both experienced and new combat medics consistently failed hands-on tests of two core life-saving skills, "assess the casualty" and "control bleeding." Second, the performance of the CT group was inadequate, less than two-thirds of the group could pass any of the hands-on tests. Third, the ET group performed as well as or better than the EM group on all four core life-saving skills and consistently better than the CT group performed.

Figure 2

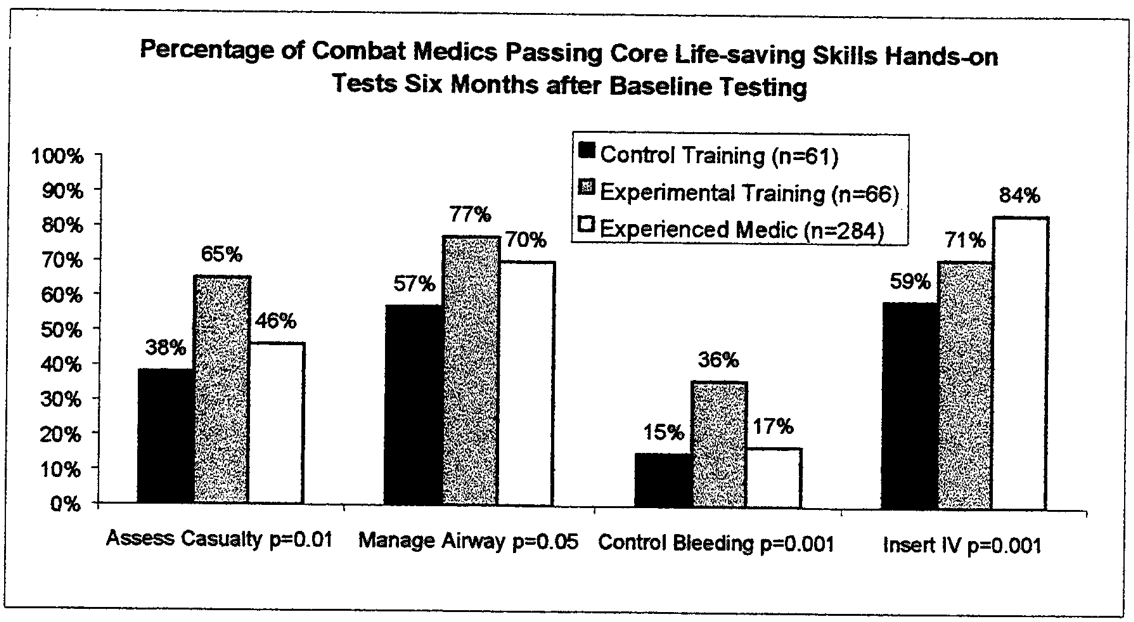


Table 48: Performance on Core Life-saving Skills Hands-on Tests Six Months after Baseline Testing

Control Training Group	Mean Score (% correct) ± Standard Deviation	Combat Medics Scoring 70% or higher (n = 61)	Combat Medics Passing Critical Criteria Standard (n = 61)
Assess Casualty	58 ±22	38%	3%
Manage Airway	70 ±17	57%	5%
Control Bleeding	54 ±15	15%	13%
Insert IV	72 ±19	59%	10%

Experimental Training Group	Mean Score (% correct) ± Standard Deviation	Combat Medics Scoring 70% or higher (n = 66)	Combat Medics Passing Critical Criteria Standard (n = 66)
Assess Casualty	73 ±19	65%	14%
Manage Airway	77 ±14	77%	8%
Control Bleeding	65 ±11	36%	39%
Insert IV	80 ±16	71%	33%

Experienced Combat Medic Group	Mean Score (% correct) ± Standard Deviation	Combat Medics Scoring 70% or higher (n = 284)	Combat Medics Passing Critical Criteria Standard (n = 284)
Assess Casualty	62 ±24	46%	0%
Manage Airway	75 ±16	70%	6%
Control Bleeding	56 ±14	17%	21%
Insert IV	83 ±12	84%	37%

Performance: How well did combat medics do on a cognitive test of life-saving skills? Both experienced and new combat medics were given a 50-item multiple-choice test. The exam tested five life-saving skills (ten items on each skill). Table 49 provides the breakdown of performance by skill area for each of the three groups. Three facts were readily apparent from these data. First, both experienced and new combat medics consistently failed written tests of three life-saving skills "assess the casualty," "control bleeding," and "treat NBC casualty." Second, the performance of the CT group was inadequate on four of the five life-saving skills; less than two-thirds of the group could pass the tests. Third, the ET group performed as well as or better than the EM group on all five life-saving skills and consistently better than the CT group performed on four of the five. This finding is illustrated in Figure 3, which shows the differences among groups in the percentage of combat medics in the field who were capable of passing written tests of life-saving skills.

Table 49: Performance on a Cognitive Test of Life-saving Skills Six Months after Baseline Testing

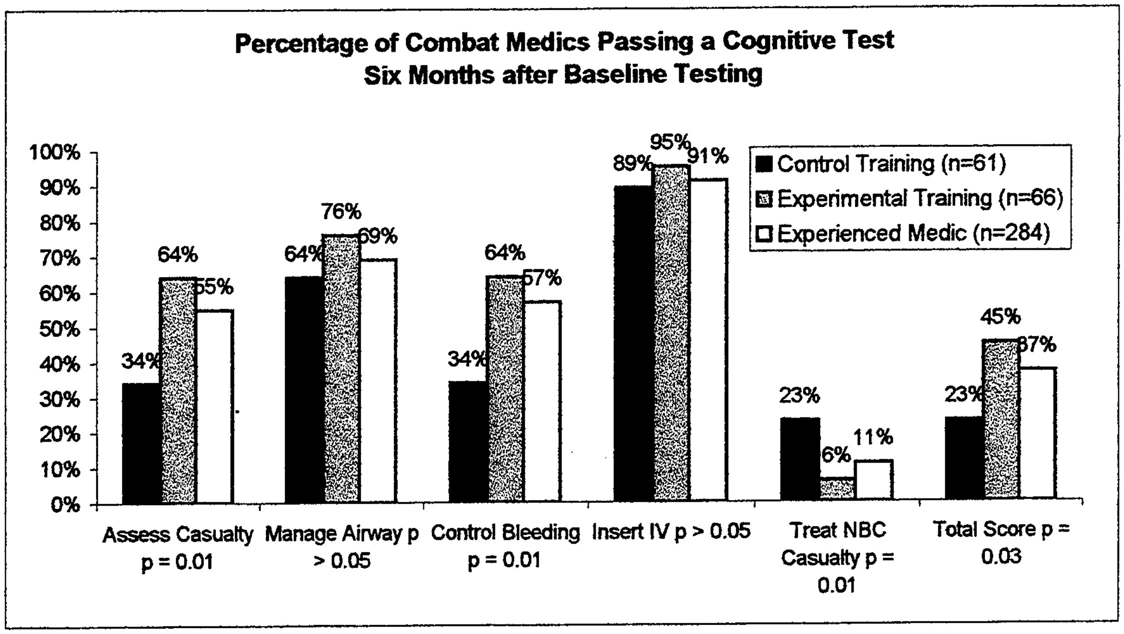
Control Training Group	Mean Score (% correct) ± Standard Deviation	Combat Medics Scoring 70% or higher (n = 61)
Assess Casualty	60 ±15	34%
Manage Airway	68 ±13	64%
Control Bleeding	59 ±17	34%
Insert IV	76 ±11	89%
Treat NBC Casualty	54 ±13	23%
Total Score	63 ± 8	23%

Experimental Training Group	Mean Score (% correct) ± Standard Deviation	Combat Medics Scoring 70% or higher (n = 66)
Assess Casualty	68 ±16	64%
Manage Airway	73 ±14	76%
Control Bleeding	70 ±13	64%
Insert IV	80 ±10	95%
Treat NBC Casualty	46 ±14	6%
Total Score	68 ± 7	45%

Experienced Combat Medic Group	Mean Score (% correct) ± Standard Deviation	Combat Medics Scoring 70% or higher (n = 284)
Assess Casualty	65 ±14	55%
Manage Airway	70 ±13	69%
Control Bleeding	67 ±15	57%
Insert IV	81 ±12	91%
Treat NBC Casualty	48 ±15	11%
Total Score	66 ± 8	37%

Differences among groups were statistically significant on four of the six measures; $\chi 2$ (2) values on significant tests ranged from 7.15 to 12.68, $p \leq 0.03$. Furthermore, these follow-up data confirm Phase I findings that the general state of knowledge and performance of life-saving skills among combat medics was substandard (i.e., a substantial number of medics could not pass the tests). This was especially true for the "treat NBC casualty" test. The level of performance shown in Figure 3 suggests that neither the school nor the unit was providing adequate training on this skill. The impact of this deficit on military medical readiness could be considerable.

Figure 3



Comparison of Performance Measures: Was performance on the cognitive test a good estimate of performance on the hands-on test? A matrix of bivariate correlations between percentage correct scores on the cognitive test (total and subtest scores) and percentage correct scores on the core life-saving skills hands-on tests was calculated for each group. Correlations ranged from -0.03 to 0.31 for the EM group, from -0.12 to 0.28 for the CT group, and ranged from -0.25 to 0.25 for the ET group, indicating that performance on the cognitive test did not predict performance on the core life-saving skills hands-on tests for any of the three groups.

Predictors of Proficiency: Were there personal or organizational factors that predicted performance on the hands-on or cognitive tests of core life-saving skills? In this portion of the data analysis, 14 variables from Phases I, II, and III were evaluated to determine if any of them were good predictors of Phase III test performance (where test performance was defined as percentage correct scores on the six cognitive tests, [total and five subtest scores], and the four core life-saving skills hands-on tests).

(1) Age. The bivariate correlations between age and percentage correct scores on the ten performance tests were calculated. Correlations ranged from -0.01 to 0.18 for the EM group, from -0.09 to 0.19 for the CT group and from -0.15 to 0.33 for the ET group, indicating that age did not predict test performance.

(2) Rank. Separate one-way ANOVAs were used to evaluate the relationship of rank to performance on the ten tests. For the EM group, there were statistically significant differences between ranks, with higher ranking individuals (E4 and E5)

performing better than lower ranking individuals (E2 and E3) on seven of the ten tests; $F(1, 282)$ values ranged from 5.71 to 21.21, $p \leq 0.02$. There were no statistically significant differences between ranks for the EM group on the cognitive test of the "insert IV" skill, on the cognitive test of the "manage the airway" skill, and the hands-on test of the "manage the airway" skill ($p > 0.05$). For the CT group, there were no statistically significant differences between ranks on any of the ten tests ($p > 0.05$). For the ET group, there was a statistically significant difference between ranks on only one test. Higher ranking individuals (E3 and E4) performed better than lower ranking individuals (E1 and E2) on the cognitive test of the "control bleeding" skill, $F(1,64) = 4.49$, $p = 0.04$.

(3) Educational Level. Combat medics were divided into three groups on the basis of their educational level: (1) high school graduate, (2) some college, or (3) college graduates (holders of associate degrees, bachelor's degrees, or advanced degrees). Separate one-way ANOVAs were used to evaluate the relationship of educational level to performance on the ten tests. For the EM group, there were statistically significant differences between educational levels; combat medics with college experience or a college degree scored higher than medics with only a high school education on five of the ten tests, $F(1,280)$ values ranged from 5.02 to 7.70, $p \leq 0.03$. There were no statistically significant differences between educational levels for the EM group on the cognitive test of the "insert IV" skill, on the hands-on test of the "insert IV" skill, on the cognitive test of the "manage the airway" skill, on the cognitive test of the "assess the casualty" skill, and on the hands-on test of the "assess the casualty" skill ($p > 0.05$). For the CT group, there were statistically significant differences between educational levels on two tests. Those combat medic students in the CT group with college experience scored higher than those in the CT group with only a high school education on the "control bleeding" hands-on test, $F(1,59) = 4.12$, $p = 0.05$, and the "manage the airway" hands-on test, $F(1,59) = 4.16$, $p = 0.05$. For the ET group, there were no statistically significant differences between educational levels on any of the ten tests ($p > 0.05$).

(4) School Motivation. All three groups were retested in Phase III on their level of school motivation. The bivariate correlations between baseline SM scores and percentage correct scores on the ten performance tests were calculated. Correlations ranged from -0.04 to 0.16, for the EM group, from -0.14 to 0.16 for the CT group, and from -0.04 to 0.40 for the ET group, indicating that SM did not predict test performance.

(5) Self-directed Learning. All three groups were retested in Phase III on their level of self-directed learning. The bivariate correlations between baseline SL scores and percentage correct scores on the ten performance tests were calculated. Correlations ranged from 0.04 to 0.12, for the EM group, from 0.03 to 0.22 for the CT group, and from -0.26 to 0.19 for the ET group, indicating that SL did not predict test performance.

(6) Baseline Performance. In Phase I, the EM group was tested on all ten-performance tests. Phase III testing was a duplication of this testing six months later. A comparison of Table 8 with Table 48 and of Table 9 with Table 49 indicates that the *average* performance of the two EM group samples was quite similar. However, the comparison of most interest in this situation is the change in *individual* performance over

time. The relationship between baseline performance and subsequent test performance was assessed by calculating the bivariate correlations between the two sets of tests. Correlations ranged from 0.22 to 0.54, indicating that baseline performance was not a generally good predictor of subsequent performance. Two tests had some predictive value (having approximately 25% shared variance). The baseline performance of the EM group on the cognitive test (total score) predicted subsequent performance on the cognitive test ($r=0.52$) and the baseline performance of the EM group on the hands-on test of managing the airway predicted subsequent performance on that test ($r=0.54$). The failure of performance on other baseline tests to predict subsequent performance should be considered evidence of the fragile nature of complex skills that were not regularly practiced.

At the beginning of combat medic training in Phase II, the CT and ET groups were given the cognitive test of life-saving skills as a pretest of their knowledge level. As previously shown in Table 39, performance on the pretest indicated that combat medic students entered combat medic training with little or no knowledge of life-saving skills, only one combat medic student in 150 could pass the test. Performance in Phase III (four months after completing the combat medic course) was, of course, substantially better (see Table 49). However, even on the pretest there was a range of scores from extremely poor to nearly passing. Thus, it was possible that pretest performance was a good predictor of performance after combat medic graduation. The relationship between baseline performance and subsequent test performance was assessed by calculating the bivariate correlations between the two sets of tests. Correlations ranged from 0.03 to 0.48, for the CT group, and from 0.07 to 0.36 for the ET group, indicating that baseline performance was not a generally good predictor of performance after graduation. For both groups the only test that had some predictive value was the total score on the cognitive test ($r = 0.48$ and 0.36, respectively). This finding was a double-edged sword. On the positive side, there was evidence that regardless of how little or how much combat medic students knew at the beginning of training, they had all achieved a similar level of knowledge and skill by course graduation. On the negative side, those combat medic students who had prior knowledge or superior intellectual skills and should be able to excel were only achieving the same standard as their classmates. Whether this was a problem with academic training in the combat medic course or on-the-job training in the field was not clear, because the CT and ET groups showed similar results.

During combat medic training in Phase II, the CT and ET groups were given core life-saving skills hands-on tests. However, passing the hands-on tests was a "GO"/"NO GO" criterion for graduation for all new combat medics, so baseline hands-on test performance scores were not available for the CT and ET groups (i.e., the actual score on the test was not recorded, only the final grade of "go".) Because all combat medic graduates passed the hands-on tests, the correlation between the baseline performance and performance after graduation could not be calculated.

(7) Grade Point Average. The bivariate correlations between GPA and percentage correct scores on the ten performance tests were calculated for new combat medics. Correlations ranged from -0.03 to 0.48 for the CT group, and from -0.03 to 0.46 for the ET group, indicating that GPA was not a generally good predictor of performance after graduation. The GPA had some predictive value (r=0.48 and 0.46, respectively) for the total score on the cognitive test. It had no predictive value for core life-saving skills hands-on tests; the correlation was typically 0.15 or less.

(8) National Registry Exam Score. The bivariate correlations between the NREMT score and percentage correct scores on the ten performance tests were calculated for new combat medics. Correlations ranged from 0.05 to 0.36 for the CT group, and from -0.10 to 0.42 for the ET group, indicating that the NREMT score was not a generally good predictor of performance after course graduation. Like GPA, the NREMT score had some predictive value for the total score on the cognitive test, but none for the core life-saving skills hands-on tests.

(9) Perceptions of Proficiency. Both experienced and new combat medics completed surveys that asked them to assess their proficiency on life-saving skills. These data were used to determine the degree to which combat medics' self-assessments were linked to their actual skill levels. Item 1 of the Experienced 91B10 Medic Questionnaire (see Appendix A) asked the medic to rate "your proficiency in performing [the] skills listed below." Table 50 shows the distribution of their responses to this item. The majority of experienced combat medics rated themselves proficient on only three of the five skills. Only 6% of experienced combat medics rated themselves as proficient in treating NBC casualties. This profile was very similar to that seen in the larger Phase I sample (see Table 12), indicating that the perceptions of experienced combat medics did not improve over the six-month period.

Table 50: Experienced Combat Medics' Ratings of their Proficiency on Life-saving Skills Six-Months after Baseline (n = 284)

Life-saving Skills	Missing	Unable to Perform	Perform with Continuous Assistance	Perform with Moderate Assistance	Perform with Minimal Assistance	Perform with No Assistance
Assess Casualty	1%	2%	5%	17%	40%	35%
Manage Airway	1%	2%	1%	13%	28%	55%
Control Bleeding	1%	1%	1%	5%	22%	70%
Insert IV	1%	1%	1%	2%	13%	82%
Treat NBC Casualty	1%	8%	24%	37%	24%	6%

Item 1 of the New Graduate 91B10 Medic questionnaire (see Appendix U) asked the new combat medic to rate "your proficiency in performing [the] skills listed below." Table 51 shows the distribution of their responses to this item. The majority of the CT group rated themselves proficient on only one of the five skills. Only 7% of the group rated themselves as proficient in treating NBC casualties. Table 51 shows that the ET group was considerably more confident of their proficiency than the CT group on four of the five life-saving skills.

Table 51: New Combat Medics' Ratings of their Proficiency on Life-saving Skills Four Months after Graduation

Control Training Group (n = 61)	Missing	Unable to Perform	Perform with Continuous Assistance	Perform with Moderate Assistance	Perform with Minimal Assistance	Perform with No Assistance
Assess Casualty	0%	0%	15%	31%	41%	13%
Manage Airway	0%	0%	8%	16%	38%	38%
Control Bleeding	0%	0%	2%	13%	34%	51%
Insert IV	0%	2%	8%	16%	38%	36%
Treat NBC Casualty	0%	7%	28%	34%	25%	7%

Experi-mental Training Group (n = 66)	Missing	Unable to Perform	Perform with Continuous Assistance	Perform with Moderate Assistance	Perform with Minimal Assistance	Perform with No Assistance
Assess Casualty	0%	0%	3%	23%	42%	32%
Manage Airway	0%	0%	0%	9%	41%	50%
Control Bleeding	0%	0%	2%	3%	27%	68%
Insert IV	0%	0%	0%	11%	17%	73%
Treat NBC Casualty	0%	5%	30%	39%	22%	3%

A comparison of the information in Tables 50 and 51 with the test performance data shown in Table 48 illustrates that substantially more combat medics rated themselves as needing minimal or no assistance than could actually pass the tests. However, as previously shown in Phase I (see Table 13), this finding was not necessarily an indication that combat medics were unaware of their limitations. To evaluate this proposition, combat medics were divided into three groups on the basis of their self-rating: (1) requiring assistance (self-rating of 1, 2, or 3), (2) requiring minimal assistance

(self-rating of 4), or (3) requiring no assistance (self-rating of 5). Separate one-way ANOVAs were used to evaluate the relationship of self-rating score to test performance. In all three groups, the pattern of differences was like that seen in Phase I (see Table 13). Those combat medics who perceived themselves to be proficient were consistently more proficient than those who did not. This pattern of performance is illustrated for Phase III data in Figures 4 and 5. In Figure 4 it is clear that the mean score of the experienced combat medics who rated themselves as needing assistance on managing an airway was below passing. Similarly, the mean score of the experienced combat medics who rated themselves as needing minimal assistance was just above passing. In contrast, the mean score of the experience combat medics who rated themselves as needing no assistance was well above passing. For the EM group, the differences were statistically significant on three of the four core life-saving skills hands-on tests and two of the six cognitive tests. The $F(2,281)$ values for significant tests ranged from 3.64 to 15.23, $p \leq 0.03$. This finding was very similar to that seen in the larger Phase I sample (see Table 13). These data were an indication that, although as a *group* experienced combat medics consistently overestimated their proficiency, their *individual* self-assessments were linked to their actual skill levels.

Figure 4

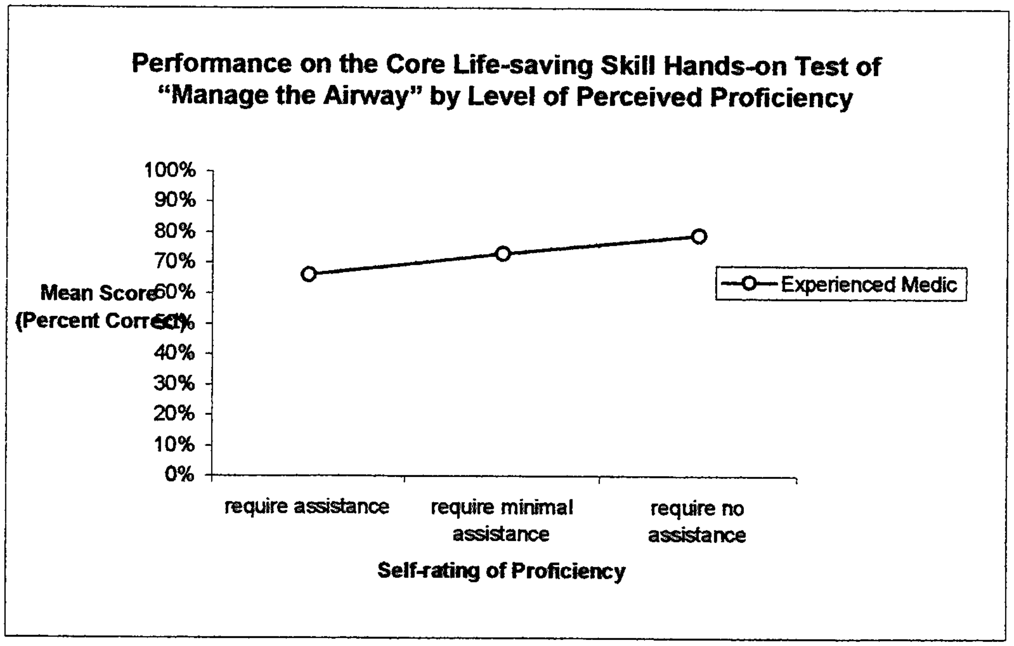
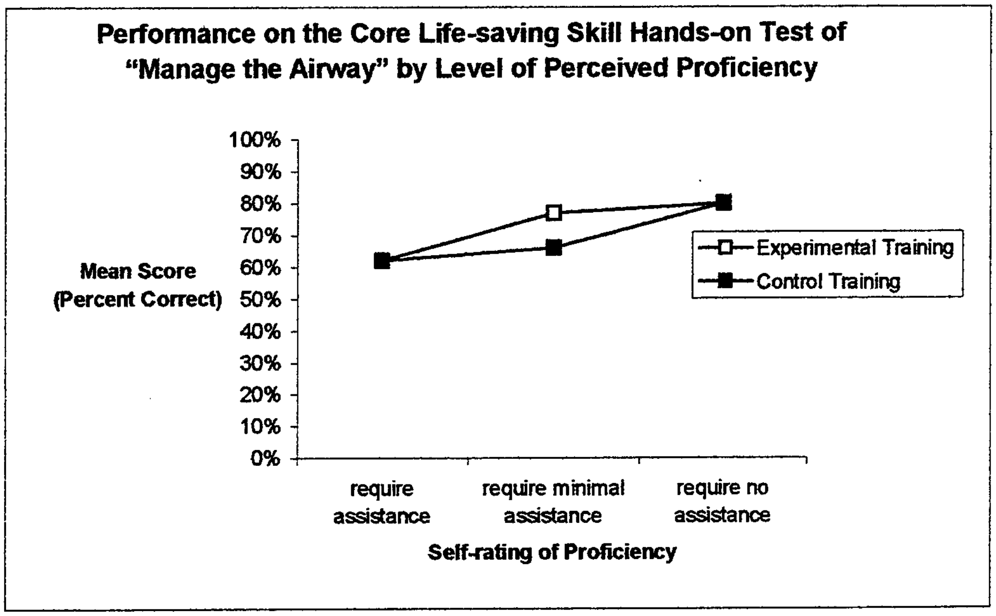


Figure 5 shows that this same pattern held for the ET and CT groups, although the performance of the CT group was not as good as that of the ET and EM groups. For the CT group, the differences were statistically significant on three of the four core life-saving skills hands-on tests and one of the six cognitive tests. The $F(2,58)$ values for significant tests ranged from 3.80 to 7.85, $p \leq 0.03$. For the ET group, the differences

were statistically significant on two of the four core life-saving skills hands-on tests and one of the six cognitive tests. The $F(2,63)$ values for significant tests ranged from 3.82 to 8.14, $p \leq 0.03$. These data were an indication that, although as a *group* new combat medics (like experienced combat medics) consistently overestimated their proficiency, their *individual* self-assessments were linked to their actual skill levels.

Figure 5



(10) TOE Experience. In the EM sample, 80% of combat medics had more than one year but less than six years of experience in TOE assignments (Table 46). An additional 3% of the sample had six or more years of experience. Separate one-way ANOVAs were used to compare the test performance of combat medics with less than one year of TOE experience to those with one or more years of TOE experience. Having more than one year of experience in a TOE assignment did not positively influence test performance. More experienced combat medics scored significantly higher than less experienced combat medics on only one test in ten, the hands-on test of controlling bleeding, $F(1,282) = 7.61$, $p < 0.01$. This finding was quite different from that found in Phase I (see Table14). The difference between results across the two Phases was consistent with the fact that the sample was six months older and more experienced. A similar analysis could not be computed on the CT and ET samples, because 100% of the combat medics had less than one year of experience in TOE units.

(11) TDA Experience. In the EM sample, 79% of combat medics had less than one year of experience in TDA assignments (Table 46). None of the combat medics had six or more years of experience. Separate one-way ANOVAs were used to compare the test performance of combat medics with less than one year of TDA experience to those

with one or more years of TDA experience. Having more than one year of experience in a TDA assignment did not positively influence test performance. More experienced combat medics scored significantly *lower* than less experienced medics on two of the ten tests, the hands-on test of assessing the casualty, $F(1,282) = 4.55$, $p = 0.03$ and the hands-on test of managing the airway, $F(1,282) = 6.43$, $p = 0.01$. This finding was quite different from that found in Phase I (see Table15). It is not immediately clear why less experienced combat medics should score higher than more experienced combat medics on these two tests. A similar analysis could not be computed on the CT and ET samples, because 99% of the combat medics had less than one year of experience in TDA units.

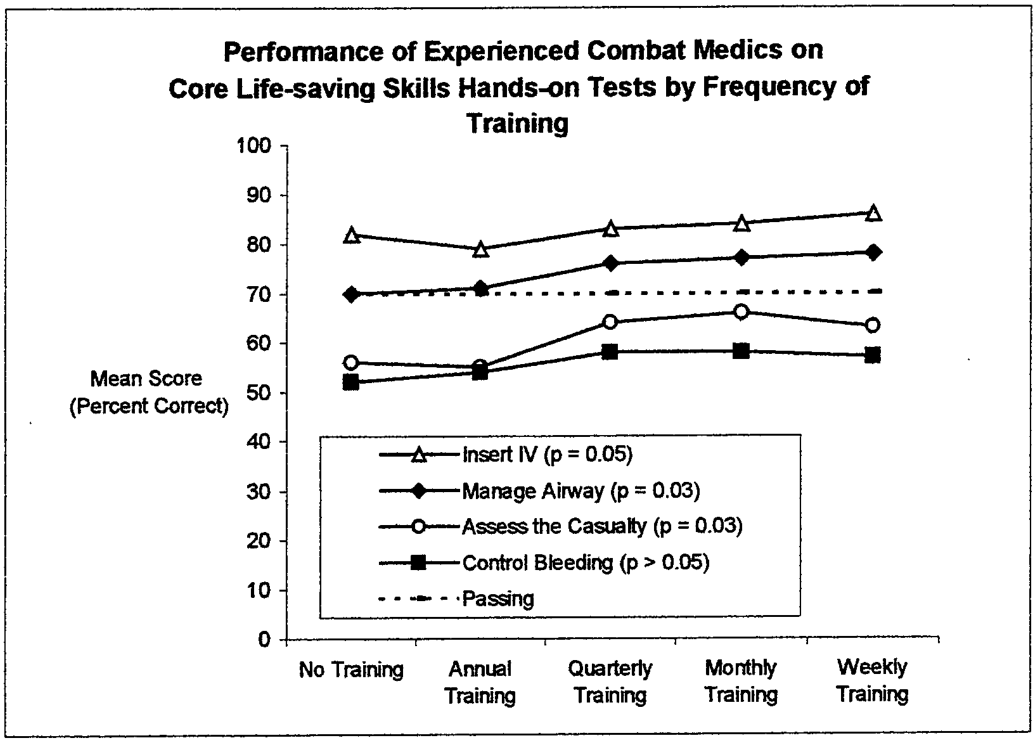
(12) Training Frequency. Item 8 of the Experienced 91B10 Medic Questionnaire (see Appendix A) asked combat medics to indicate the amount of training on life-saving skills that they had received in the last year. Item 2 of the New Graduate 91B10 Medic Questionnaire (see Appendix U) asked the same question. Table 52 shows the distribution of responses to these questions. All three groups responded in a similar fashion, making it clear that the majority of combat medics received regular training specifically on life-saving skills.

Table 52: Percentage of Combat Medics Receiving Training on Life-saving Skills

Groups	No Training	Annual Training	Quarterly Training	Monthly Training	Weekly Training
Experienced Medic Group (n = 284)	15%	17%	28%	27%	14%
Control Training Group (n = 61)	20%	7%	23%	31%	20%
Experimental Training Group (n = 66)	17%	3%	18%	30%	32%

Separate one-way ANOVAs were used to evaluate the relationship of training frequency to test performance. There were no significant differences in test performance on any of the ten tests as a function of training frequency in the CT or ET groups ($p > 0.05$). As was true in Phase I (see Table 16), training frequency did not significantly influence the test performance of the EM group on any of the six cognitive tests ($p > 0.05$). However, training frequency did have a small and statistically significant effect on performance on three of the four core life-saving skills hands-on tests. The $F(4,279)$ values for significant tests ranged from 2.47 to 2.64, $p \leq 0.05$. Those in the EM group who received no training or only annual training performed more poorly than those who received quarterly or more frequent training. This finding was illustrated in Figure 6. In general, these data suggest that *frequency* of training is not the key to making *large* improvements in performance. Future studies should assess the effects of frequency, content, quality, and timing of training.

Figure 6



(13) Patient Interaction Frequency. Item 12 of the Experienced 91B10 Medic Questionnaire (see Appendix A) asked combat medics to indicate the amount of interaction they had with patients in the last year. Item 8 of the New Graduate 91B10 Medic's Questionnaire (see Appendix U) asked the same question. Table 53 shows the distribution of responses to these questions. Experienced combat medics were more likely than new combat medics to interact frequently with patients. This fact was not surprising given that new combat medics had been on station less than six months. However, the majority of experienced and new combat medics did not regularly interact with patients.

Table 53: Percentage of Combat Medics Interacting with Patients

Groups	0 days per year	1 - 5 days per year	6 - 90 days per year	90+ days per year
Experienced Medic Group (n = 284)	37%	20%	21%	22%
Control Training Group (n = 61)	67%	15%	12%	7%
Experimental Training Group (n = 66)	44%	29%	23%	5%

Separate one-way ANOVAs were used to evaluate the relationship of patient interaction to test performance. Amount of patient interaction did not influence performance on any of the ten tests in either the CT or ET groups. It significantly influenced the performance of the EM group on only two of the ten tests: the cognitive tests of "insert IV" and "manage NBC casualty." The $F(2,281)$ values for the two tests ranged from 2.58 to 3.22, $p \leq 0.05$. In both cases, the performance of the EM group who had no patient interaction was equivalent to those who had 6 to 90 days and those who had 90+ days. Those in the EM group who reported having 1 to 5 days of patient interaction per year performed more poorly than all others. Thus, these data, like that of Phase I, suggest that *frequency* of patient interaction was not the key to improving performance. It was more likely that the nature of the work done when interacting with patients was the key.

(14) Unit of Assignment. The test performance of experienced combat medics is influenced by all the medic training they receive in their careers. However, the most recent training, training in the combat medic's current unit of assignment, may well have the most impact on current performance. Items 30 through 34 of the Experienced 91B10 Medic Questionnaire (see Appendix A) identified EM by their current units and duty assignments. Combat medics in the EM group were overwhelmingly assigned to TOE units (89%) and to Battalion combat medic duty assignments (89%). Items 30 through 34 of the New Graduate 91B10 Medic Questionnaire (see Appendix U) identified ET and CT combat medics by their current units and duty assignments. New combat medics were like experienced combat medics in terms of the nature of their assignments: 95% of the CT group and 95% of the ET group were assigned to TOE units and 81% of the CT group and 89% of the ET group were assigned to Battalion combat medic duty assignments. There simply was not enough diversity in assignments of combat medics to evaluate the influence of unit of assignment on combat medic proficiency.

Perceptions of Key Issues: What were the noteworthy performance and training issues? Experienced and new combat medics were surveyed on a variety of issues concerning the performance and training of combat medics at the AMEDD Center & School, in the field, and on the job. The following paragraphs summarize the similarities and differences between EM, ET, and CT groups on their responses to four key issues.

(1) Medic Proficiency. Item 1 of the Experienced 91B10 Medic Questionnaire and item 1 of the New Graduate 91B10 Questionnaire asked the medic to rate "your proficiency in performing [the] skills listed below." Experienced combat medics' perception of their proficiency was evaluated in Phase I (see Tables 12 and 22) and again six months later in Phase III (see Table 50). New combat medics' perception of their proficiency was evaluated in Phase III, four months after graduating from the combat medic course (see Table 51). Table 54 summarizes the data from Phases I and III. The purpose of Table 54 is to highlight four phenomena.

Table 54: Comparison of Experienced and New Combat Medic Ratings of their Proficiency on Life-saving Skills

Percent group rating themselves needing minimal/no assistance				
Skills	**EM group at baseline testing (n = 347)**	**EM group six months after baseline (n = 284)**	**ET group four months after graduation (n = 66)**	**CT group four months after graduation (n = 61)**
Assess Casualty	65%	75%	74%	54%
Manage Airway	80%	83%	91%	76%
Control Bleeding	87%	92%	95%	85%
Insert IV	89%	95%	90%	74%
Treat NBC Casualty	24%	30%	25%	32%

First, a comparison of the first and second columns of Table 54 suggested that the confidence of the original sample of EM improved over the six-month period. Any one of several factors might explain this change: increases in relevant experience, maturation, sensitization due to repeated testing, or attrition in the sample. Second, a comparison of the second and third columns of Table 54 reveal that the new combat medics who had graduated from the experimental combat medic course were as confident as far more experienced combat medics. Third, a comparison of the third and fourth columns of Table 54 reveal that there was a large difference in confidence between combat medics in the ET group and those in the CT group. Combat medics in the CT group were far less confident than their classmates, despite that fact that all of the new combat medics had received four months of on-the-job training. Fourth, few experienced or new combat medics rated themselves as proficient to treat an NBC casualty. This prominent lack of confidence suggests that neither the school nor the unit was providing adequate training on this skill. The failure to prepare combat medics for NBC operations is a weakness in military medical readiness.

(2) Unit Training Priorities. Item 8 of the Experienced 91B10 Medic Questionnaire and item 2 of the New Graduate 91B10 Questionnaire asked combat medics to indicate the amount of training on life-saving skills that they had received. As discussed earlier in the report (see Table 52), all three groups - EM, ET, and CT - indicated that units provided regularly scheduled training specifically on life-saving skills. The poor test performance of combat medics was evidently not the result of a lack of unit training.

Experienced and new combat medics were also asked to indicate which skills they practiced on the job (item 21 of the Experienced 91B10 Medic Questionnaire and item 21 of the New Graduate 91B10 Questionnaire). Responses to these items are summarized in Table 55. These data were comparable to those gathered in Phase I (see Table 25). It is clear that combat medics did not routinely practice all life-saving skills on the job. Moreover, there were areas of obvious difference between new and more experienced combat medics. Apparently, new combat medics were far more likely to be assigned to take vital signs than were experienced combat medics, but they were not as likely to go on to triage patients or make physical assessments of them. New combat medics were more likely than more experienced combat medics to start an IV, but experienced combat medics were more likely to be assigned the task of monitoring a patient with an IV.

Table 55: Comparison of Experienced and New Combat Medic Ratings of the Tasks Commonly Practiced by 91B10 Medics

		Choosing the skill as one practiced by 91B10 medics		
Life-saving Skill	**Tasks**	**EM group (n = 281)**	**ET group (n = 66)**	**CT group (n = 61)**
Assess Casualty	vital signs	1%	80%	69%
	take patient history	50%	56%	64%
	perform physical examination	76%	42%	52%
	lift/transfer patients	88%	30%	41%
	perform triage	60%	38%	46%
Manage Airway	perform manual airway skills	54%	26%	41%
	perform CPR	41%	29%	34%
	administer oxygen	12%	35%	33%
Control Bleeding	apply bandages/dressings	61%	62%	51%
	apply hot/cold packs	77%	53%	39%
Insert IV	create a sterile field	47%	38%	43%
	put on sterile gloves	48%	50%	61%
	start IV	52%	79%	70%
	monitor patient on IV fluids	89%	64%	59%

(3) Unit Training Resources. Item 10 of the Experienced 91B10 Medic Questionnaire asked combat medics to indicate how recently they had used a specific training resource. Item 5 of the New Graduate 91B10 Questionnaire asked combat medics to indicate whether they had used a specific training resource (and if so, how effective it had been). Table 56 summarizes the responses of experienced and new combat medics. These data confirm those of Phase I (see Table 26) with one notable exception, the use of computer simulations rose from 10% to more than 60%. A variety of media were used for training. Mannequins and physical simulators were commonly used. Most units used field exercises and real patients for training purposes, although new combat medics were less likely to have used moulage or real patients. The poor test performance of medics was evidently not the result of a lack of training or training resources.

Table 56: Comparison of Experienced and New Combat Medic Ratings of the Use of Training Resources

Training Resources	EM group using the resource in the last 12 months (n = 284)	ET group using the resource in unit training (n = 66)	CT group using the resource in unit training (n = 61)
Mannequins	73%	76%	75%
Simulators (IV arm)	75%	74%	74%
Videotapes	64%	68%	74%
Computer Simulations	70%	79%	62%
Moulage	51%	14%	2%
Field Exercises	83%	76%	75%
Simulated Patients	78%	50%	21%
Textbooks	64%	83%	77%

(4) School Training Priorities. Item 14 of the Experienced 91B10 Medic Questionnaire and item 16 of the New Graduate 91B10 Questionnaire asked combat medics to indicate what they thought the combat medic school's priorities for teaching skills to proficiency should be. Table 57 summarizes the responses of experienced and new combat medics. These data confirm those of Phase I (see Table 27). There was good agreement that core life-saving skills should have a high priority to be taught to proficiency and that soldier skills and information management skills should not.

Table 57: Comparison of Experienced and New Combat Medic Ratings of Training Priorities for the Combat Medic Course

	Rating the skill as needing a high priority		
Skills	EM group (N = 284)	ET group (n = 66)	CT group (n = 61)
Life-saving Skills	92%	89%	84%
Military Medic Skills	49%	60%	49%
Soldier Skills	29%	39%	30%
Patient Care Skills	54%	56%	52%
Sick Call/ Clinic Skills	48%	55%	48%
Information Management Skills	18%	12%	16%

Sustaining Combat Medic Proficiency

Was the sustainment-training program at Fort Hood effective in sustaining the performance of experienced combat medics on hands-on tests of core life-saving skills? Experienced combat medics were tested in Phase I and again six months later in Phase III. Although installations participating in the study had different kinds of missions, operational tempos, and training programs, analysis of Phase I performance data suggested that these differences did not systematically influence the test performance of experienced combat medics. That is, experienced combat medics at one installation did not consistently perform better than experienced combat medics at the other installations (see Table 18). However, in the six-month period between Phase I and Phase III, Fort Hood was given a new sustainment-training program. The other installations in the project, Fort Bragg, Fort Carson, and Fort Lewis had regularly scheduled combat medic training, but it was not always focused specifically on maintaining proficiency on core life-saving skills. The program at Fort Hood was designed to provide specific, high fidelity, sustainment training on four core life-saving skills. Thus, the performance of experienced combat medics at different installations was analyzed in order to evaluate the effectiveness of the new sustainment-training program.

Only 284 of the 347 experienced combat medics tested in Phase I were available for testing in Phase III. However, as shown in Table 46 earlier and in Table 58 below, the sample of 284 experienced combat medics was clearly representative of the sample of 347 experienced combat medics. Thus, the estimate of change over time should be an accurate one.

Table 58: Comparison of Phase I Performance of Phase I and Phase III Samples of Experienced Combat Medics

Phase I Hands-on Tests	Percentage of Phase I Sample Scoring 70% or higher (n = 347)	Percentage of Phase III Sample Scoring 70% or higher (n = 284)
Assess Casualty	17%	16%
Manage Airway	51%	51%
Control Bleeding	20%	20%
Insert IV	76%	79%

Figure 7 shows that experienced combat medics at Fort Hood were the only ones who showed an improvement in performance over time on all four tests. Because the effectiveness of the new sustainment-training program was an important *a priori* question, which could only be answered by analysis of the interaction effect of installations and time, and because changes at installations other than Fort Hood were not expected to be statistically significant, the change in performance over time was evaluated with individual comparisons tests. Table 59 shows the results of these tests. It was clear from these results that the sustainment-training program at Fort Hood was the most effective overall program. Figure 7 and Table 59 also make clear that although performance improved on some tasks at each installation, it was still inadequate in many cases (the *average* of the *group's* performance was less than passing), signaling the critical need for highly accessible and high quality sustainment training.

Figure 7

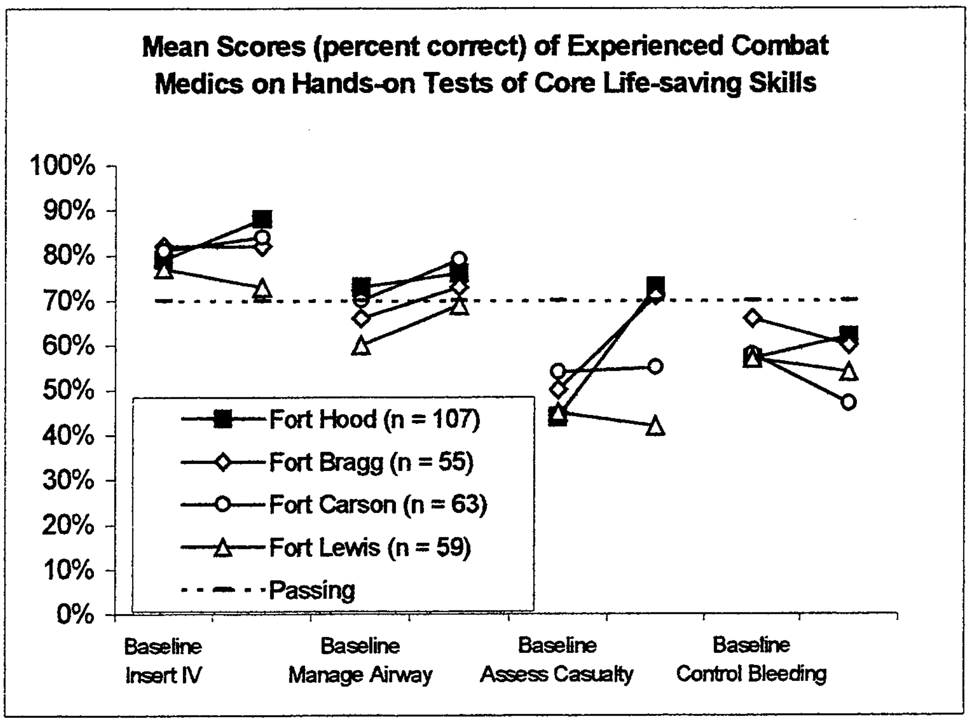


Table 59: Comparison of Mean Scores (Percent Correct) of Experienced Medics Group on Hands-on Tests at Baseline and Six Months Later by Installation

	Baseline Performance Mean ± SD	Six-month Performance Mean ± SD	Critical Value	p
Fort Hood			**t(106)**	
Insert IV	79±11	87±9	7.47	0.001
Manage Airway	73±14	76±15	2.58	0.01
Assess Casualty	44±22	73±19	15.32	0.001
Control Bleeding	57±13	62±14	2.63	0.01
Fort Bragg			**t(54)**	
Insert IV	82±9	82±9	0.18	*
Manage Airway	66±17	73±16	7.08	0.001
Assess Casualty	50±23	71±23	2.94	0.01
Control Bleeding	66±12	60±14	-3.23	*
Fort Carson			**t(62)**	
Insert IV	81±11	84±13	2.10	0.04
Manage Airway	70±13	79±11	8.01	0.001
Assess Casualty	54±14	55±18	0.40	*
Control Bleeding	58±13	47±11	-5.49	*
Fort Lewis			**t(58)**	
Insert IV	77±10	73±11	-1.98	*
Manage Airway	60±17	69±20	3.53	0.001
Assess Casualty	45±22	42±21	-1.20	*
Control Bleeding	57±16	54±10	-1.84	*

*not significant, > 0.05 or the critical value was negative indicating that performance degraded over time

Was the sustainment-training program at Fort Hood effective in sustaining the performance of new combat medics on hands-on tests of core life-saving skills? New combat medics were tested twice in Phase III. The first time was six months after baseline testing and the second was nine months after baseline testing. During the time between graduation from 91B10 training and Phase III testing, new combat medics participated in their installation's sustainment training program. New combat medics assigned to Fort Hood used the new sustainment-training program. Thus, the performance of new combat medics at different installations was analyzed in order to evaluate the effectiveness of the new sustainment-training program. For these comparisons, new combat medics who had been trained in the control 91B10 course and new combat medics who had been trained in the experimental 91B10 course were considered separately. The change in performance over time was evaluated with individual comparisons tests for three reasons. The effectiveness of the new sustainment-training program was an important *a priori* question, which could only be answered by analysis of the interaction effect of installations and time. The changes at installations other than Fort Hood were not expected to be statistically significant. The group sizes were quite small.

Figure 8 shows that among new combat medics trained in the control 91B10 course those at Fort Hood showed an improvement in performance over time on all four tests. This result did not occur at any other installation. Table 60 shows the results of the individual comparisons tests. Figure 9 shows that among new combat medics trained in the experimental 91B10 course, those at Fort Hood did not have a clear advantage. Evidently, new combat medics trained in the experimental 91B10 course were able to benefit from many different kinds of sustainment training. Table 61 shows the results of the individual comparison tests.

Figure 8

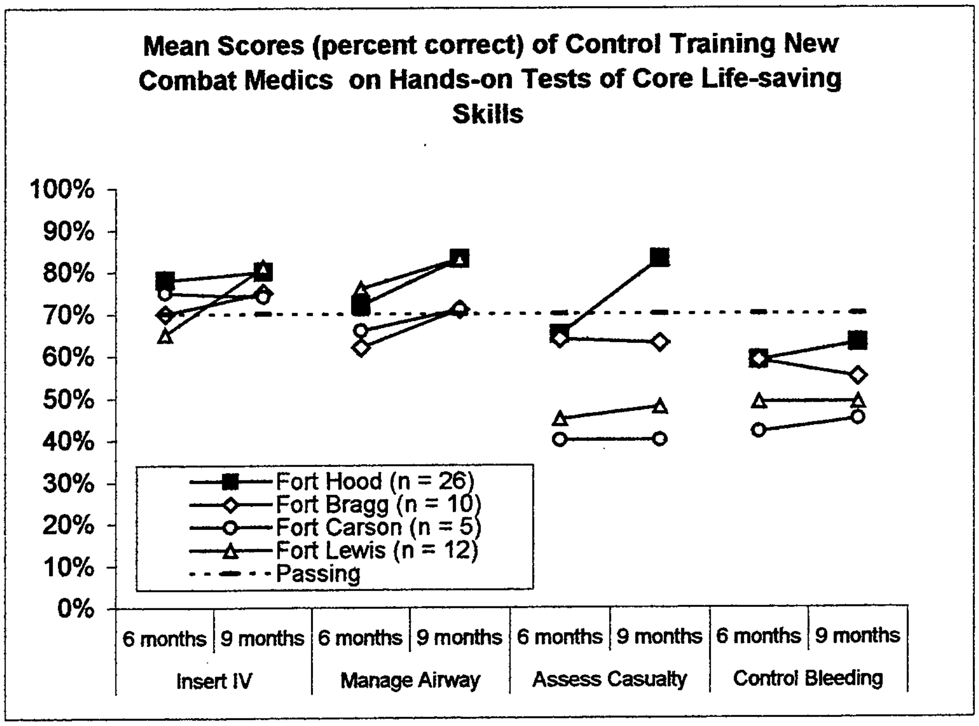


Table 60: Comparison of Mean Scores (Percent Correct) of Control Training Group on Hands-on Tests at Six Months and Nine Months after Baseline by Installation

	Six-month Performance Mean + SD	Nine-month Performance Mean + SD	Critical Value	p
Fort Hood			**t(25)**	
Insert IV	78+15	80+14	0.45	*
Manage Airway	72+17	84+9	3.66	0.001
Assess Casualty	65+19	83+18	3.33	0.01
Control Bleeding	59+15	63+15	1.00	*
Fort Bragg			**t(9)**	
Insert IV	70+10	75+13	1.19	*
Manage Airway	62+20	71+11	1.67	*
Assess Casualty	64+19	63+18	-0.22	*
Control Bleeding	59+15	55+12	-0.89	*
Fort Carson			**t(4)**	
Insert IV	75+22	74+16	-0.38	*
Manage Airway	66+15	71+14	0.57	*
Assess Casualty	40+15	40+21	-0.06	*
Control Bleeding	42+6	45+7	1.01	*
Fort Lewis			**t(11)**	
Insert IV	65+24	81+10	2.41	0.03
Manage Airway	76+14	83+9	1.96	*
Assess Casualty	45+23	48+22	0.34	*
Control Bleeding	49+15	49+11	0.13	*

*not significant, > 0.05 or the critical (value was negative indicating that performance degraded over time)

Figure 9

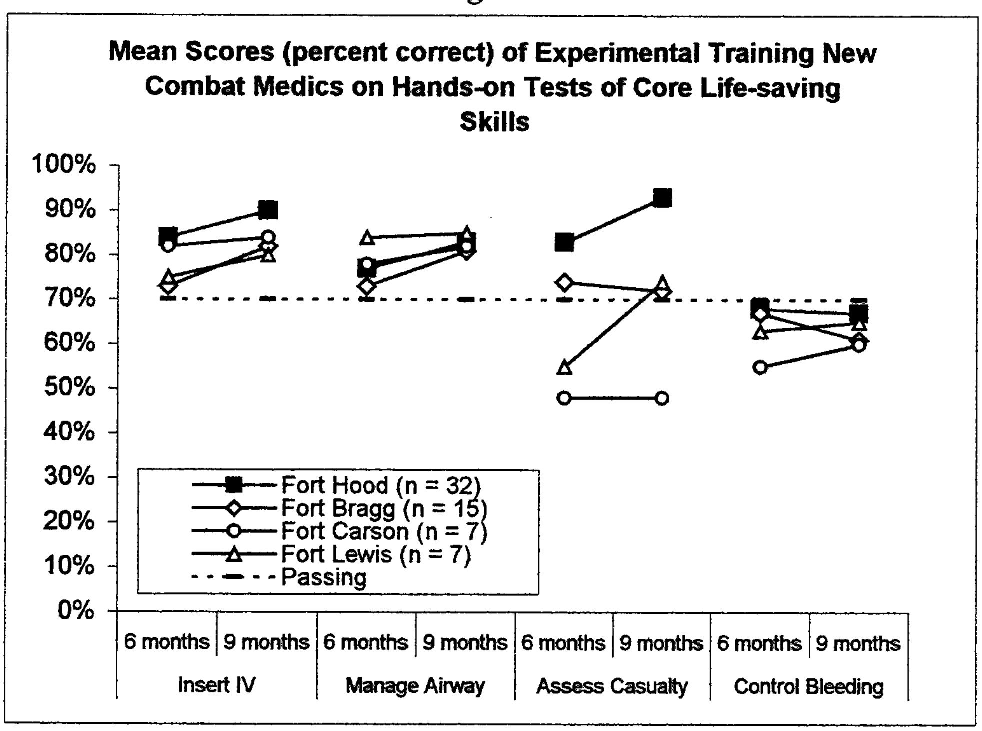


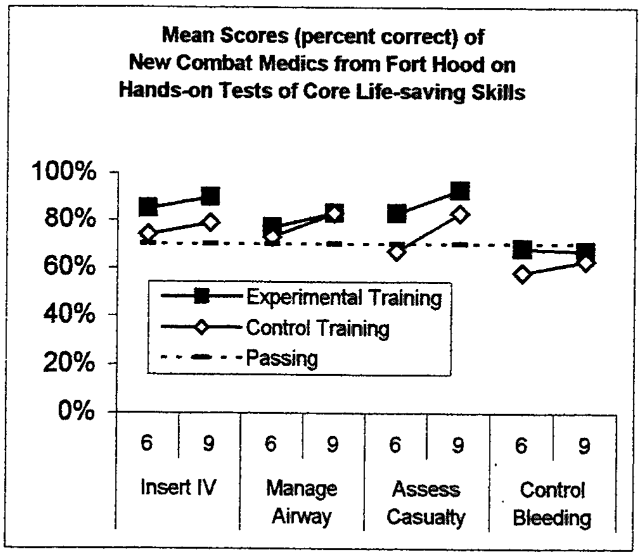
Table 61: Comparison of Mean Scores (Percent Correct) of Experimental Training Group on Hands-on Tests at Six Months and Nine Months after Baseline by Installation

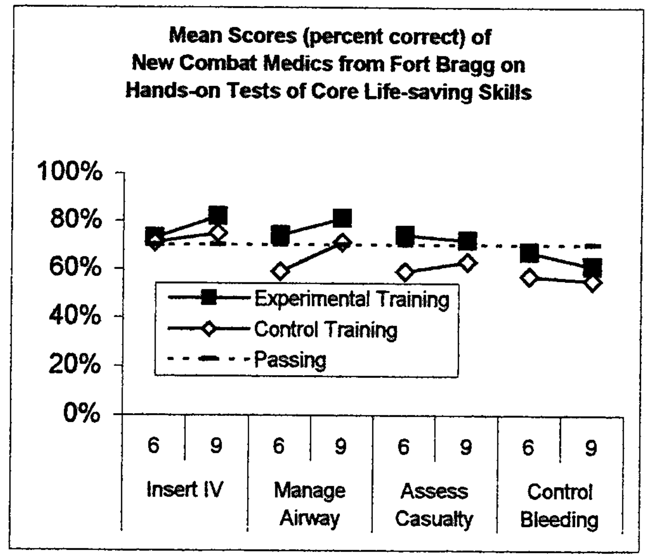
	Six-month Performance Mean $\pm$ SD	Nine-month Performance Mean $\pm$ SD	Critical Value	p
Fort Hood			t(31)	
Insert IV	84±12	90±11	2.56	0.02
Manage Airway	77±15	82±11	2.23	0.03
Assess Casualty	83±13	93±8	4.27	0.001
Control Bleeding	68±12	67±13	-0.21	*
Fort Bragg			t(14)	
Insert IV	73±19	82±10	2.12	0.05
Manage Airway	73±16	81±10	1.38	*
Assess Casualty	74±14	72±11	-0.48	*
Control Bleeding	67±9	61±11	-2.45	*
Fort Carson			t(6)	
Insert IV	82±18	84±13	0.22	*
Manage Airway	78±11	82±7	1.52	*
Assess Casualty	48±13	48±16	-0.06	*
Control Bleeding	55±7	60±8	1.93	*
Fort Lewis			t(6)	
Insert IV	75±15	80±12	2.48	0.05
Manage Airway	84±9	85±5	0.23	*
Assess Casualty	55±23	74±13	2.31	*
Control Bleeding	63±13	65±6	0.60	*

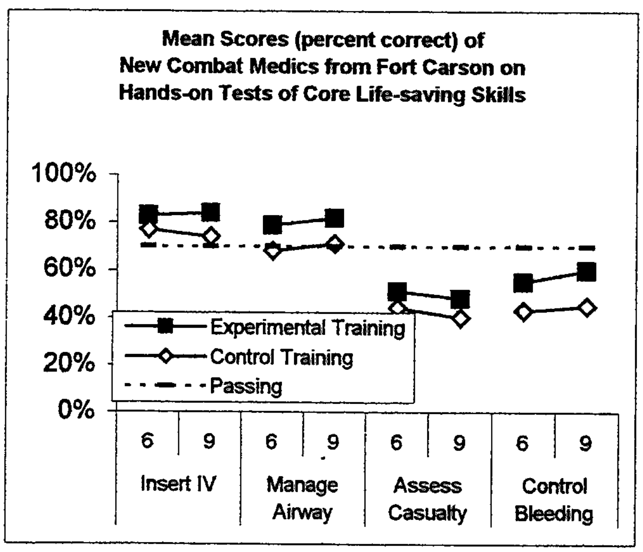
*not significant, > 0.05
(or the critical value was negative indicating that performance degraded over time)

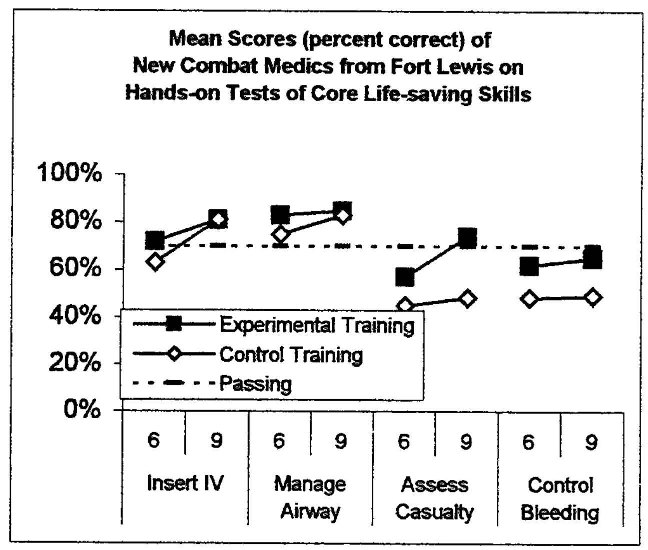
What was the long-term effect of 91B10 training on performance of hands-on tests of core life-saving skills? The differences seen between control and experimental training groups in Figures 8 and 9 suggested that the experimental 91B10 course had a long-term positive effect on proficiency. Figure 10 shows the same data arrayed by initial training group rather than by installation. This figure clearly shows the impact of both initial and sustainment training on performance. Data were analyzed using a 2 x 2 (Initial Training Groups x Tests) mixed ANOVA, where "Groups" was a between subjects factor and "Tests" was a repeated measures factor. The ET group scored significantly higher than the CT group on all four tests, $F(1,112)$ values ranged from 5.26 to 20.32, $p \leq 0.02$. When collapsed over installation, performance nine months after baseline showed significant improvement over previous performance for both groups on three of the four tests. Performance on the "control bleeding" test did not significantly improve. The $F(1,112)$ values on significant tests ranged from 13.78 to 29.72, $p \leq 0.001$. These results confirmed that graduates of the experimental 91B10 course were better prepared than graduates of the control 91B10 course and that the effect was long-term. They made it clear that the typical unit sustainment-training program was not sufficient to remove the CT group's deficit. These data, taken as a whole, clearly illustrated the importance of a good start, that is, the need for high standards and quality training at the AMEDD Center & School. They also confirm the ability of sustainment training to enhance life-saving skills.

Figure 10


Mean Scores (percent correct) of
New Combat Medics from Fort Hood on
Hands-on Tests of Core Life-saving Skills
100%
80%
60%
40%
20%
0%
Experimental Training
Control Training
Passing
6
9
Insert IV
Manage Airway
Assess Casualty
Control Bleeding


Mean Scores (percent correct) of
New Combat Medics from Fort Bragg on
Hands-on Tests of Core Life-saving Skills
100%
80%
60%
40%
20%
0%
Experimental Training
Control Training
Passing
6
9
Insert IV
Manage Airway
Assess Casualty
Control Bleeding


Mean Scores (percent correct) of
New Combat Medics from Fort Carson on
Hands-on Tests of Core Life-saving Skills
100%
80%
60%
40%
20%
0%
Experimental Training
Control Training
Passing
6
9
Insert IV
Manage Airway
Assess Casualty
Control Bleeding


Mean Scores (percent correct) of
New Combat Medics from Fort Lewis on
Hands-on Tests of Core Life-saving Skills
100%
80%
60%
40%
20%
0%
Experimental Training
Control Training
Passing
6
9
Insert IV
Manage Airway
Assess Casualty
Control Bleeding

Qualitative Results of Phase III

Experienced versus New Combat Medics

In Phase III, 411 combat medics (experienced and new medics combined) offered written responses to the survey (See Appendix A and Appendix U). Three major trends emerged from this data. Thirty-four percent (141/411) of the combat medics that gave written responses stated their primary duties in the unit were motorpool activities, cutting grass, clerking, and other details. These combat medics stated they did not use their medical skills.

The last trend that emerged from the combat medic responses was concern over the lack of unit training of medical skills. Twelve percent (49/411) of the combat medics that responded stated there was a lack of sustained medical training in their units.

Conclusions

- The poor test performance of combat medics is evidently not the result of a lack of unit training, training resources, or inappropriate training priorities.
- It is clear that combat medics did not routinely practice all core life-saving skills on the job.
- The demographics of the Phase III samples of experienced and new combat medics were representative of Phase I and II samples. Differences that did occur were consistent with the fact that the sample was six months older and more experienced.
- Most experienced and new combat medics did not perceive themselves to be completely proficient. They rarely perceived themselves to be proficient in treating NBC casualties.
- New combat medics from the experimental combat medic course performed as well as or better than experienced combat medics on the hands-on and cognitive tests of life-saving skills and consistently better than new combat medics from the control combat medic course.
- Phase III data confirmed that the general state of knowledge and performance of life-saving skills among combat medics was substandard (i.e., a substantial number of experienced and new combat medics could not meet the minimum standard of a 70% score).
- The failure rate for the "treat NBC casualty" test was especially high, indicating that neither the school nor the unit was providing adequate training on this skill. The impact of this deficit on military medical readiness could be considerable.
- Performance on written tests did not predict performance on hands-on tests.
- Baseline test performance was not a good predictor of Phase III test performance.
- None of the academic variables (school motivation, self-directed learning, grade point average, and national registry exam scores) were good predictors of hands-on test performance.

- Age did not predict test performance. Rank and educational level were good predictors of the test performance of experienced combat medics only.
- Experienced and new combat medics who perceived themselves to be proficient were consistently more proficient than those who did not.
- Having more than one year of experience in a TOE assignment did not positively influence test performance. This finding is quite different from that found in Phase I. The difference between results across the two Phases is consistent with the fact that the sample is six months older and more experienced.
- Having more than one year of experience in a TDA assignment did not positively influence test performance.
- Neither the frequency of training nor the frequency of interaction with patients positively influenced test performance.
- There simply was not enough diversity in assignments of combat medics to evaluate the influence of duty assignment on medic proficiency.
- The new sustainment training program at Fort Hood was the most effective program overall.
- The experimental 91B10 course had a positive long-term effect on the proficiency of new combat medics. The size of the treatment effect was equivalent to a year or more of experience. The data clearly illustrated the importance of a good start, that is, the need for high standards and quality training at the AMEDD Center & School.
- 34% of the combat medics that offered written comments stated that their primary duties in units were motorpool activities, lawn care, clerking, and other non-medical details. These combat medics stated they did not use their life-saving skills.
- 12% of the combat medics that offered written comments stated they needed sustainment training on their life-saving skills.

Discussion

Phase III results demonstrated unequivocally that the typical 91B10-level combat medic was not capable of safely and effectively performing the most essential tasks of the military occupational specialty(MOS). Data from three different sources (self-ratings of proficiency, supervisors' ratings of proficiency, and objective testing data) collected more than once (Phase I, II, and III) were in complete agreement. The typical 91B10-level combat medic could not be trusted to assess a casualty, stop the bleeding, maintain an airway, insert an IV, or manage an NBC casualty, the essential life-saving skills that define the combat medic's role in the Army. Four facts are worth emphasizing. First, these data were not taken from a small convenience sample nor were they collected in a snapshot fashion. They were collected from a large sample of military personnel that were systematically chosen to represent the Army's front line medics. They were collected from multiple perspectives and on more than one occasion. Second, these were not data compiled in an ivory tower or by a civilian medical organization. These data were provided by front-line combat medics and their supervisors, who were frustrated, disappointed, and embarrassed by their inability to perform the most basic mission of the

military medical force. Third, a minimal standard of 70% was used to define passing, not an arbitrary standard of perfect performance. Fourth, these conclusions are not new. Data from this study only confirm that problems, which have existed for 20 years, have not been solved (Blythe, et al., 1979; Latman and Wooley, 1980; Richardson, 1989; Skelton and McSwain, 1977; Training Evaluation Division, 1981; Zadinsky, 1997; Zautche, Lee, and Ethington, 1987).

Fortunately, this was not the only take-home-message provided by the Phase III results. Although the performance of both experienced and new combat medics was typically at or below the minimum standard for passing, the relative differences in performance across groups and units did offer some potential solutions. First, Phase III data demonstrated that training philosophy made a difference. Graduates from the experimental combat medic course, which emphasized hands-on practice and immediate feedback, were far better prepared than students who graduated from the control course. They were, in fact, able to perform at the same level as combat medics with 1 to 5 years of experience. Furthermore, they were able to maintain their superior performance for more than six months after graduation. Second, Phase III data demonstrated that training focus made a difference. Combat medics assigned to units with formal sustainment training programs that focused on hands-on practice of life-saving skills were able not only to sustain their skills but also to improve their skills over time. Third, Phase III data demonstrated that command support made a difference. Combat medics and their supervisors did not complain that there was no time for unit training, that there were no resources for training, or that there were no opportunities for realistic field training. They said that unit training failed because combat medics did not practice their life-saving skills during the course of their day-to-day work. They said that unit training failed because commanders did not understand the complexity and intensity of the training required and placed a higher priority on vehicle maintenance, lawn care, and other post details.

Finally, special attention must be drawn to the problem of training combat medics to treat NBC casualties. Data from self-ratings of proficiency, supervisors' ratings of proficiency, and written tests (Phases I, II, and III) indicated that 4 out of 5 combat medics had significant deficits in this area. In every evaluation conducted in this study, the lowest scores were always for treating NBC casualties. Both academic and unit training failed to teach combat medics this essential skill. It is unlikely that there will be a simple solution to this problem. Assessing and treating an NBC casualty is not a fundamental skill. Combat medics must have a good grasp of the principles required to treat a conventional casualty before they can begin to grasp the complexities involved in caring for NBC casualties. Moreover, high fidelity NBC training is complex and resource-intensive. The ability to treat an NBC casualty was not tested with a hands-on test in this study because the logistical burden was too high. If the ability to treat an NBC casualty is critical to the role of a 91B10-level combat medic, then new academic and unit-training programs as well as adequate logistical support must be developed to teach and sustain the skill.

PILOT TEST OF THE MEDICAL FIELD READINESS INDEX

The Army considers physical fitness an essential element of military readiness. For this reason, every soldier in the Army is required to pass a standardized physical fitness test. Furthermore, every unit is required to report its readiness in terms of the percentage of its soldiers who are able to pass the test. This accountability requirement insures that all commanders give priority to physical fitness training and testing. A similar accountability requirement does not exist for combat medic proficiency.

The AMEDD considers the performance of 91B10 combat medics an essential element of medical readiness. For this reason, a final element of this study was a pilot test to evaluate the feasibility of a Medical Field Readiness Index (MFRI). The prototype MFRI testing system was modeled after the physical fitness testing system. If this system were implemented, individual combat medics would be tested in a hands-on manner on four core life-saving skills and the percentage of combat medics able to pass the four tests would be used to define the unit's medical readiness. The individual combat medic's scores on the hands-on tests would be used to give him/her an overall readiness score, called the "Combat Medic MFRI" (CM-MFRI). The scores of all the combat medics in a unit would be combined to give the unit an overall readiness score, called the "Unit MFRI" (U-MFRI).

Design

Nine NCOs were recruited from Fort Sam Houston and Fort Hood to participate in a pilot test of the prototype MFRI system. All nine were familiar with the hands-on tests used in this study to test combat medic proficiency. On the first day of this pilot test, each participant was given a set of 40 completed score sheets, 10 blank CM-MFRI forms, and 1 blank U-MFRI form. The score sheets represented the data from ten hypothetical combat medics who had been administered hands-on tests of the four core life-saving skills. The score sheets were like those used in this study to test the proficiency of experienced and new medics (see Appendix E). The participants were asked to (a) use the score sheets to compute the medic's total score on each of the four tests, (b) use the score sheets and the CM-MFRI forms to compute each medic's CM-MFRI score, and (c) use the ten CM-MFRI forms to compute the unit's U-MFRI score. Copies of the prototype forms used to compute the CM-MFRI and the U-MFRI are provided in Appendix V. On the second day of this pilot test, each participant was given the same materials and asked to do the same task over again, in order to evaluate the test-retest reliability of the CM-MFRI and the U-MFRI forms.

Results

Validity

The face and content validity of the MFRI were established when the method of proficiency testing was developed.

Accuracy

An attempt was made to compute an accuracy index to quantify how accurately each participant scored the 40 hands-on tests, transferred the scores to the 10 CM-MFRI forms, computed the 10 CM-MFRI scores, and computed the U-MFRI score. However, the participants scored the 40 hands-on tests from the *hypothetical* combat medics using a variety of algorithms rather than the standard that had been established for *actual* combat medics during the study. This made it impossible to judge accuracy. Clearly, the first finding of the pilot test was that the method for recording the scores on hands-on tests of proficiency would have to be simplified a great deal, if the testing system were to be implemented Army-wide.

Compliance

A compliance index was computed to quantify how well the participants followed instructions on the CM-MFRI and U-MFRI forms. On the CM-MFRI, compliance scores for the nine participants ranged from 56% to 100% (mean of 72%, SD of 14%). The participants' errors pointed to four ways in which the form could be improved. First, two-thirds of the participants did not transfer the combat medic's test score from the score sheet to the CM-MFRI form. This error would have significant negative consequences, if the prototype CM-MFRI form were to be used Army-wide, because it would make it impossible to check for calculation errors or to verify an individual combat medic's performance, if there were a dispute. Second, participants did not reliably enter information that they perceived to be redundant. For example, columns 2 and 3 of the CM-MFRI form asked for very similar information; participants typically entered one of the items requested, but not both. Third, although participants typically adhered to the instructions not to round numbers, this was a source of occasional error. Moreover, it was clear that participants found this instruction troubling, because they commonly wrote down their answers with four significant digits. The conversion table in Column 5, which did not indicate how to convert a score of zero and did not have any decimal points in the point ranges, apparently made the conversion difficult. Finally, there is no need to make the conversion in Column 4 before making the final conversion to a readiness score. This step could be deleted. A revised form, which corrects these four problems, is presented in Figure 11.

On the U-MFRI, compliance scores for the nine participants ranged from 78% to 100% (mean of 90%, SD of 11%). The participants' errors pointed to three ways in which the form could be improved. First, participants did not reliably enter information that they perceived to be redundant. For example, columns 3 and 4 of the U-MFRI form asked for very similar information; participants typically entered one of the items requested, but not both. Second, participants typically did not enter the total number of medics in the unit in Column 3. In this pilot test, the number was 10, so the math was easy, no doubt making this step seem like a trivial one, which could be skipped. However, in a real-life situation, documenting this number would be critically important, because it is a number that varies, often substantially, from month to month. Finally,

there is no need to make the conversion in Column 5 before making the final conversion to a readiness score. This step could be deleted. A revised form, which corrects these three problems, is presented in Figure 12.

Reliability

Given the inability to compute an accuracy index and the very low compliance index score for the CM-MFRI, it was not possible to compute test-retest reliability coefficients for either the CM-MFRI or the U-MFRI.

Figure 11

Combat Medic (91B10)
Medical Field Readiness Index
(CM-10-MFRI)

Soldier's Name:	**Soldier's SSN:**
Evaluator's Name:	**Date Tested:**

Column 1	**Column 2**	**Column 3**	**Column 4**
Life Saving Skill	**Enter Points Awarded**	**Points Possible**	**Divide Column 2 by Column 3 and multiply times 100**
Trauma Assessment		39	%
Airway Management		34	%
IV Therapy		22	%
Bleeding Control		10	%

Average Score: Add the numbers in Column 4, divide by 4, and enter the answer here →	

0.00% to 59.99% = **0** (Failed to meet the standard)
60.00% to 69.99% = **1** (Met the provisional standard; retest in 30 days)
70.00% to 89.99% = **2** (Met the standard)
90.00% to 100.00% = **3** (Exceeded the standard)

Using the formulas above, convert the Average Score to a MFRI and enter the answer below.

CM-10-MFRI	

Figure 12

Unit Medical Field Readiness Index
91B10 Combat Medic (U-10-MFRI)

Unit's Name:	**Unit's UIC:**
Commander's Name:	**Date Computed:**

Column 1	**Column 2**	**Column 3**	**Column 4**
Life Saving Skill	**Number of medics who passed (scored 70% or higher)**	**Number of medics in unit**	**Divide Column 2 by Column 3 and multiply times 100**
Trauma Assessment			%
Airway Management			%
IV Therapy			%
Bleeding Control			%

Average Score: Add the numbers in Column 4, divide by 4, and enter the answer here →	

0.00% to 59.99% = **0** (Failed to meet the standard)
60.00% to 69.99% = **1** (Met the provisional standard; retest in 30 days)
70.00% to 89.99% = **2** (Met the standard)
90.00% to 100.00% = **3** (Exceeded the standard)

Using the formulas above, convert the Average Score to a MFRI and enter the answer below.

U-10-MFRI	

Conclusions

- The method for recording scores on the hands-on proficiency tests should be simplified before implementing the MFRI.
- The CM-MFRI form should be revised to eliminate common sources of compliance errors and pilot-tested again.
- The U-MFRI form should be revised to eliminate common sources of compliance errors and pilot-tested again.
- The cost of proficiency testing all 91B10 combat medics and computing CM-MFRI and U-MFRI scores should be evaluated in a large sample.

Discussion

Implementation of a MFRI system would reduce one of the major obstacles to medical sustainment training, lack of command support. Holding commanders accountable for the proficiency of their 91B10 combat medics would assist commanders in setting priorities for training. The MFRI system evaluated in this pilot test appears to be a feasible method for quantifying the proficiency of 91B10 combat medics.

STUDY RECOMMENDATIONS

1. The adult learning model should be fully implemented in the 91B10 course.

Two elements of the results led to Recommendation 1. First, data from the after action report of the Phase II training officer, the staff observations of classroom and laboratory presentations, the instructor evaluations of the course, and the student evaluations of the course all indicated that there were key differences between the traditional and experimental 91B10 courses. Second, data from written and hands-on tests of medics in Phase III demonstrated that new medics who graduated from the experimental 91B10 course were not only significantly more proficient at core life-saving skills than those who graduated from the traditional 91B10 course, but were also were more proficient than combat medics with substantially more experience. These two findings suggested that the experimental 91B10 course was more effective than the traditional 91B10 course and that it should become the model for future 91B10 courses.

Implementing the adult learning model will require substantive changes to the 91B10 program of instruction. Concepts and skills will need to be presented in an integrated and iterative manner rather than in a modular manner. Practical exercises will need to be integrated throughout the course. Graded and ungraded hands-on testing will need to be integrated into the daily routine. Students participating in hands-on testing will need to be given immediate feedback using standardized skills sheets. These changes will encourage students to develop a problem-solving approach to learning. Furthermore, the results of this study indicated that higher educational achievement and

higher GT scores were associated with higher achievement in 91B10 school. Thus, peer-teaching and small group work will need to be integrated into classroom presentations and diagnostic testing sessions. These practices will encourage more self-directed learning behaviors by letting advanced students serve as role models for their peers.

2. Instructors of 91B10 combat medics should have intensive training in teaching strategies that facilitate adult learning in both the classroom and laboratory.

Three elements of the results led to Recommendation 2. First, data from the staff observations of faculty presentations indicated that the adult learning model was more effectively implemented in the laboratory than in the classroom. Second, data from motivation tests indicated that both self-directed learning and school motivation significantly declined during Phase II for students in both the traditional and the experimental 91B10 courses. Third, neither self-directed learning nor school motivation predicted performance in either the traditional or the experimental 91B10 course. These data indicated that the adult learning model was not fully implemented in the experimental 91B10 course. They suggested that faculty needed more training in how to incorporate the adult learning model into their teaching practices.

Implementing an adult learning model in the 91B10 course will not be a simple change in the curriculum. It will require meaningful changes in faculty orientation, as well. Instructors will need to maintain currency in their clinical skills. They will need to attend the Pre-hospital Trauma Life Support Course and to have two weeks of annual refresher training working in the emergency room and the intensive care unit. Results of the study indicated that the program for teaching first responder responsibilities for the assessment and treatment of Nuclear, Biological, and Chemical casualties was completely ineffective. Instructors will need to become subject matter experts in this area, so that they can integrate the teaching of these skills into the teaching of core life-saving skills. Instructors will need formal classes in the theory and principles of adult learning and self-directed learning. They will need formal training in how to implement adult learning principles in the classroom. They will need to attend the Small Group Instructor Course and to participate in mock schoolhouse training sessions. The change to an adult learning model will be more effective if it is phased in and subjected to an ongoing program evaluation.

3. The standard for graduation from the 91B10 course should be hands-on proficiency with life-saving skills.

Two elements of the results led to Recommendation 3. First, the results of hands-on tests of core life-saving skills administered six months after baseline testing showed that new combat medics who were trained in an experimental 91B10 course were not only more proficient than new combat medics who had been trained in a traditional 91B10 course, but were also more proficient than substantially more experienced combat medics. Second, the results of hands-on tests of core life-saving skills administered nine months after baseline testing showed that new combat medics who were trained in an

experimental 91B10 course continued to be more proficient than new combat medics who had been trained in the traditional 91B10 course.

Performance on the hands-on test of "assessing the casualty" was a good example of the results that led to Recommendation 3. Only 46% of experienced combat medics passed the test (scored 70% or more) and only 38% of new combat medics who were trained in the traditional 91B10 course passed the test. In contrast, 65% of new combat medics who were trained in the experimental 91B10 course passed the test. Because the majority of new combat medics from the traditional 91B10 training failed the proficiency test, it was clear that the standard used in initial 91B10 training was too low to produce a fully proficient combat medic. Because experienced combat medics performed only slightly better than traditionally trained new combat medics, it was clear that unit training was not able to produce a fully proficient combat medic. That is, either initial 91B10 training did not provide experienced combat medics with the background needed to make good use of unit training or units could not provide sufficient training to bring life-saving skills up to standard. In either case, the need for higher standards in initial 91B10 training standards was apparent.

The performance of new combat medics who had been trained in the experimental 91B10 course was significantly better than that of their colleagues. Clearly, the experimental model's emphasis on hands-on proficiency throughout the training produced graduates who were more proficient – graduates who just a few months after graduation performed as though they had years of experience.

The results of proficiency testing nine months after baseline testing showed that both groups of new combat medics improved between the six-month and nine-month follow-up tests. However, new combat medics who had been trained in the experimental 91B10 course were still performing at significantly higher levels than those who had been trained in the traditional 91B10 course. That is, both groups of medics were able to improve their performance with sustainment training, but those who had been trained in the traditional manner were not able to reach the same levels as those who had been trained with an emphasis on hands-on proficiency. These data showed the long-term value of having a good start.

In summary, these results suggested that the performance standards of the experimental 91B10 course were more effective than the traditional 91B10 course in producing proficient combat medics. Therefore, they should become the model for future 91B10 courses.

Implementing the adult learning model will require substantive changes to the manner in which students are evaluated. For example, current procedures in the 91B10 course permit students to retake tests many times and do not emphasize immediate feedback, particularly after written tests. These practices encourage students to take a passive role rather than an active role in the process. Implementing an adult learning model will require that students be given the opportunity to take diagnostic tests until they decide they are prepared to take a test for the record. Diagnostic tests will need to

be followed by immediate feedback on individual performance. As a practical matter, all students should be encouraged to take one diagnostic test and the number of diagnostic tests any student is allowed to take should be limited to some maximum number (e.g., three). In any case, students who fail a test graded for the record should be formally considered for disenrollment (i.e., rarely, rather than automatically, be given a chance to retake the test). Furthermore, the results of this study indicate that a higher standard of "passing" will be needed if a proficiency standard is instituted. For example, students should have to score 80% on tests, rather than 70%. This higher standard should insure that initial on-the-job performance will be adequate and that new combat medics will have the knowledge and skill to benefit from sustainment training. These changes should be subjected to an ongoing program evaluation, which includes monitoring the on-the-job performance of graduates. Finally, both students and instructors believed that the current 91B10 course should be longer than 10 weeks. Teaching to proficiency will require that fundamentals be practiced until students have mastered them. If the course is lengthened, the extra time should be used to teach to proficiency, not to teach advanced skills.

4. Installations should be given a standardized sustainment-training program focused on core life-saving skills.

Two elements of the results led to Recommendation 4. First, a comparison of the change in performance from baseline testing to six month testing of experienced combat medics demonstrated that an improvement in proficiency occurred on all four skills only at Fort Hood. Second, a comparison of the change in performance from six month testing to nine month testing of new combat medics demonstrated that consistent improvements in proficiency occurred only at Fort Hood. Between Phases I and II a new sustainment-training program was instituted at Fort Hood. The program focused on four core life-saving skills and emphasized hands-on proficiency. The results of proficiency testing demonstrated the effectiveness of the program.

The standardized sustainment-training program will be more effective if the trainers and supervisors of 91B10 receive training in how to use the program and receive the supplies and equipment needed to employ it fully. The program will be more effective if there is an incentive for combat medics to use it. The program should be certified for continuing education credits by the National Registry of Emergency Medical Technicians. The program will be more effective if it is comprehensive. It should cover all five of the mission essential life-saving skills: assess a casualty, manage the airway, control bleeding, insert an IV, and manage a nuclear, biological and chemical casualty. The program will be more effective if it is phased in at large installations first and subjected to an ongoing program evaluation.

5. A Medical Field Readiness Index that holds commanders accountable for maintaining 91B10 combat medic proficiency should be implemented Army-wide.

Four elements of the results led to Recommendation 5. First, feedback from supervisors of combat medics, experienced combat medics, and new combat medics all agreed that combat medics did not routinely practice life-saving skills in the normal

course of their day-to-day activities on the job. Thus, sustainment training was necessary. Second, they all agreed that training sessions dedicated to teaching life-saving skills were given regularly. Weekly or monthly training on these topics was the norm. Third, they all agreed that training resources (mannequins, videotapes, field exercises, etc.) were available and were used regularly to teach life-saving skills. Fourth, supervisors of combat medics indicated that their only major training barrier was a lack of command support.

Supervisors suggested that commanders needed to be held accountable for medical readiness, just as they are held accountable for the physical fitness of their soldiers. This study demonstrated clearly that it was feasible to conduct large-scale proficiency testing of medics. As a result a standardized method for computing a Medical Field Readiness Index was developed. This system for assessing and recording individual and unit medical readiness should be implemented Army-wide.

APPENDIX A

Experienced Combat Medic Questionnaire

[Intentionally left blank]

EXPERIENCED 91B10 MEDIC

Purpose: The purpose of this study is to assess readiness and skill proficiency of 91B10 medic in the rank of E-4 and below in your unit. Results of this survey will advise senior leaders at the AMEDD Center and School about changing training for 91B10 medics.

Directions: Circle the number or item that best describes your answer. All of your answers will be confidential. Answer **every** question.

If you as a 91B10 medic have an additional skill identifier (ASI) such as PT, OT, optometry, 91C etc., please tell the researcher now or return this questionnaire unanswered to your immediate supervisor now.

If you expect to PCS **before 1 April 1999** or to be TDY or deployed for 15 days or more in March 1999, please tell the researcher now. **No names** on this questionnaire please.

Section One

EXPERIENCED MEDIC

Experienced medic is the 91B10 medic with 1 year or more of time as a 91B10.

Proficiency is the knowledge and skill to perform to a standard safely without assistance or supervision.

1. From options 1 through 5 below, select the number best describing your proficiency in performing skills listed below.

Options:
1. Unable to perform
2. Perform with continuous assistance
3. Perform with moderate assistance
4. Perform with minimal assistance
5. Proficient, perform the skill safely without assistance

Skills	Circle one number				
a. Assessing the combat casualty	1	2	3	4	5
b. Managing the airway	1	2	3	4	5
c. Controlling bleeding	1	2	3	4	5
d. Inserting an IV	1	2	3	4	5
e. Caring for casualty in a NBC environment	1	2	3	4	5

2. The AMEDD Center and School prepared you to perform in a combat environment? (Circle one number below.)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

3. The AMEDD Center and School prepared you to perform in humanitarian missions and health operations other than war? (Circle one number below.)

   1. Strongly disagree
   2. Disagree
   3. Undecided
   4. Agree
   5. Strongly agree

---

4. The AMEDD Center and School prepared you to perform in combat support hospitals? (Circle one number below.)

   1. Strongly disagree
   2. Disagree
   3. Undecided
   4. Agree
   5. Strongly agree

---

5. The AMEDD Center and School prepared you to perform in emergency departments or ambulance transport? (Circle one number below.)

   1. Strongly disagree
   2. Disagree
   3. Undecided
   4. Agree
   5. Strongly agree

---

6. The AMEDD Center and School prepared you to perform in inpatient wards? (Circle one number below.)

   1. Strongly disagree
   2. Disagree
   3. Undecided
   4. Agree
   5. Strongly agree

---

7. The AMEDD Center and School prepared you to perform in sick call clinics? (Circle one number below.)

   1. Strongly disagree
   2. Disagree
   3. Undecided
   4. Agree
   5. Strongly agree

Unit Resources are time, personnel, computers, computer software, audio-visual equipment, medical simulators, medical supplies and equipment, actual patients, and simulated patients.

8. From options 1 through 5 below, select the frequency you trained in the skills listed below in the last 12 months.

Options:
1. No training done
2. Weekly training
3. Monthly training
4. Quarterly training
5. Annual training

Skills	**Circle one number**				
a. Life saving skills	1	2	3	4	5
b. Military medic skills (transport casualty, preventive medicine)	1	2	3	4	5
c. Soldier skills (preventive maintenance, weapons familiarization, field radio)	1	2	3	4	5

9. Select from options 1 through 6 below, the number best describing the last time you completed intensive training such as EMT-Basic, MPT, BTLS, or an ARTEP after graduating from the 91B10 course.

Options:
1. No training done
2. Less than 1 month ago
3. 1 - 3 months ago
4. 4 - 6 months ago
5. 7 - 12 months ago
6. More than a year ago

Write one number on each blank line below

___ EMT training ___ ARTEP exercise

___ MPT training ___ EFMB training

___ BTLS training ___ Inservice/Continuing Education

___ Other ________________________________ (write-in)

10. Select from options 1 through 5 below, the number best describing the training resources that helped you to practice **life saving skills** such as assessing casualty, managing airway, controlling bleeding, inserting an intravenous (IV) with IV fluids, and managing a NBC casualty.

Options:
1. No training done
2. Less than 1 month ago
3. 1 - 3 months ago
4. 4 - 6 months ago
5. 7 - 12 months ago
6. More than a year ago

Write one number on the blank line beside the training aid

___ Mannequins ___ Simulators such as an IV arm

___ Video tapes ___ Computer simulations

___ Moulage ___ Field exercises

___ Real patients ___ Textbooks

Other ____ (write-in)

Patient Contact is interacting with patients and performing medic skills on patients.

11. As a 91B10 medic, do you have patient contact in a hospital or clinic as part of on-going medic training in your unit? (Circle one number)

1. Yes...**go to question 12 and continue**
2. No....**go to question 13 and continue**

---

12. In the last year, how often did you interact with patients after assignment to your current unit? (Circle one number)

1. 5 days or less
2. 6 - 14 days
3. 15 - 30 days
4. 31 - 90 days
5. More than 90 days

Train-up is training or retraining of new medics by the unit to improve medic performance.

13. How much patient contact time do you think medics need to **train-up** 91B10 medic skills to proficiency each year? (Circle one number)
    1. 5 days or less
    2. 6 - 14 days
    3. 15 - 30 days
    4. 31 - 90 days
    5. More than 90 days

---

14. From the options below, select the number describing what you think should be taught to **proficiency** at the 91B10 course.

Options:
1. Not a priority to be taught to proficiency
2. Low priority to be taught to proficiency
3. Moderate priority to be taught to proficiency
4. High priority to be taught to proficiency

Write one number on the blank line beside the skill

___ **life saving skills** such as assessing casualty, managing airway, controlling bleeding, inserting IV with IV fluids, and managing a NBC casualty

___ **military medic skills** such as transports casualty, field documentation, preventive medical skills such as inspecting water containers and disposing of medical waste

___ **soldier skills** such as disinfecting water, vehicle preventive maintenance checks, weapon familiarization, operating a field radio, day/night navigation, surviving a NBC environment on the battlefield

___ **patient care skills** such as insert and remove nasogastric tube, insert and remove urinary catheter, assist patient to perform activities of daily living

___ **sick call/clinic skills** such as assist with troop medical clinic care, patient assessment, provide temporary relief of minor symptoms

___ **information management skills** such as E-mail, Internet, word processing

---

15. In performing your job, do you have access to a computer? (Circle one number)
    1. Yes
    2. No

16. From options 1 through 5 below, select your proficiency in performing computer skills listed below.

Options:
1. Unable to perform
2. Perform with continuous assistance
3. Perform with moderate assistance
4. Perform with minimal assistance
5. Proficient in computer skills, no assistance needed

Computer Skills	**Circle one number**				
a. Use E-mail to send and receive messages	1	2	3	4	5
b. Word processing programs such as Word or Word Perfect	1	2	3	4	5
c. Surf the Internet	1	2	3	4	5
d. Operate hospital automated systems such as CHCS (Composite Health Care System)	1	2	3	4	5

Section two

NEW MEDIC

is the 91B10 graduate from the 91B10 course with less than 1 year experience.

17. From the options below, select the item best describing your priority of soldier skills and duties at the 91B10 course that should be taught to assist the new medic's initial fit into the military culture and mission of your unit.

Options:
1. Not a priority
2. Low priority
3. Moderate priority
4. High priority

Write one number on the blank line beside the skill

___ Military courtesy

___ APFT (physical fitness)

___ Day/night navigation

___ Weapons familiarization

___ Surviving on a NBC battlefield

___ Drill & Ceremony

___ CQ

___ Code of War & military conduct

___ Operating field radio

___ Other ________________________________ (write-in)

Valued Team Member is a member who is respected and included by others to train and perform the mission.

18. Circle the option below best describing the new medic's level of acceptance as a valued team member by the non-medic members in your unit. (Circle one number)

    1. Not accepted
    2. Low acceptance
    3. Moderate acceptance
    4. High acceptance

---

19. From the options below, prioritize factors contributing to 91B10 medic's acceptance by non-medic soldiers in your unit.

    Options:
    1. Not a priority
    2. Low priority
    3. Moderate priority
    4. High priority

    Write one number on the blank space

    ___ Appears skilled

    ___ Understands and behaves according to informal rules of unit

    ___ Demonstrates interest in filling mission requirements other than medic mission

    ___ Demonstrates ability to adapt

    ___ Demonstrates ability to be open-minded

    ___ Appears to be a self-learner

    ___ Other ____(write-in)

SKILLS

If you work in a hospital go to question 20 and continue
If you work in a TO&E unit go to question 21 and continue

20. Where do 91B10 medics work in your unit? (Check all that apply.)

___ Clinic

___ Sick Call Clinic

___ Emergency Department

___ Ambulance Section

___ Operating Room

___ Critical Care Unit

___ Wards

___ Other ________________________________ (write-in)

21. What skills are practiced by at least 50% of the 91B10 medics in your hospital or clinic? Check all that apply.

___ Vital Signs
___ Lift/Transfer patients
___ Take patient history
___ Perform physical examination
___ Perform triage

___ Create a sterile field
___ Put on sterile gloves
___ Assist with activities of daily living
___ Assist with procedures
___ Perform communication skills

___ Perform manual airway skills (i.e. chin-lift, head-tilt)
___ Perform CPR
___ Perform endotracheal intubation
___ Administer oxygen

___ Splint patient's extremity
___ Apply bandages/dressings
___ Apply hot/cold packs
___ Document patient care activities

___ Start an IV
___ Monitor patient on IV fluids
___ Insert/remove urinary catheters
___ Insert/remove nasogastric tubes
___ Other ________________________________ (write in)

22. Should the new medic be certified at the basic emergency medical technician-basic level (EMT-B) upon graduation from the 91B10 course? (Circle one number)

    1. Yes...**go to question 23 & continue**
    2. No....**go to question 24 and continue**

---

23. Circle below reasons EMT-Basic certification is needed for the new medic upon graduation from the 91B10 course. (Circle all that apply then **go to question 25 and continue**)

    1. EMT-Basic certification is a recognized measure of proficiency in medic skills.
    2. EMT-Basic certification may allow access to civilian medical facilities in our area that are not currently open.
    3. EMT-Basic certification supports the medic's ability to transfer emergency medic skills to the military setting.
    4. EMT-Basic certification is important for operations other than war for humanitarian and disaster assistance.
    5. Units do not have the resources of time, personnel, or money to train-up 91B10 graduates to certify.
    6. Other ______________________________(write in)

---

24. Circle below reasons EMT-Basic certification is not needed for the new medic upon graduation from the 91B10 course. (Circle all that apply)

    1. EMT-Basic certification and medic's mission are not related.
    2. EMT-Basic certification will not open access to patients in civilian medical facilities in our area.
    3. EMT-Basic certification interferes with the medic's ability to transfer emergency medic skills to the military setting.
    4. New medics receive all the training needed at the 91B10 course to perform the combat mission without EMT-Basic certification.
    5. Leadership does not show interest in keeping certification current.
    6. EMT-Basic certification is not tied to promotion or career progression.
    7. Other __________________________________(write in)

Section Three

DEMOGRAPHICS

Demographics will help researchers interpret results from your **installation** and <u>will not</u> be analyzed to report differences about individuals. Researchers will report information about age, gender, ethnicity, and educational background as group data to describe whether those participating in the study represent a cross-section of enlisted and officer views at each installation. Please answer **all** of the items. Your answers are important and confidential.

25. What is your gender? (Circle one number)
    1. Male
    2. Female

26. What is your age? ______ (write on the line)

---

27. What is your ethnic identification? (Circle one number)

1. African-American
2. Asian-American
3. Caucasian-American
4. Hispanic-American
5. American Indian
6. Other ______________________________(write-in)

---

28. What is the **highest** educational level that you have completed? (Circle one number)

1. Less than high school
2. High school diploma or GED
3. Some college, no degree
4. Some college, license, or certificate
5. College, associate's degree (i.e. AA, AS)
6. College, Bachelor's degree (i.e. BA, BS, BSN)
7. Graduate degree, advanced (i.e. MBA, MA, MS, MSN, MPH)
8. Graduate degree, professional (i.e. Ph.D., MD, DO)

---

29. Circle the number indicating your current grade?

1. E - 2
2. E – 3
3. E – 4
4. E – 5
5. E – 6
6. E - 7

---

30. What type of unit are you assigned? (Circle one number)

1. TO&E unit..........**go to question 31 and continue**
2. Hospital or clinic...**go to question 33 and continue**

---

31. If TO&E unit, what type of TO&E unit? (Circle one number)

1. Combat/Combat Support BN
2. Medical Company: Forward Support BN, Main Support BN, Area Support Medical BN, Evacuation Air/Ground
3. TO&E Hospital (CSH, MASH, TO&E General Hospital
4. Other ________________________________ (write-in)

32. If TO&E unit, what is your position (Circle one number, then **go to question 36**)

1. Combat Medic (TO&E Combat Medic Section)
2. Ambulance Aide/Driver (TO&E)
3. Medical Specialist
4. Flight Medic (TO&E Air Evacuation)
5. Litter Bearer (CSH, MASH, TO&E General Hospital)
6. Other ______________________________(write-in)

---

33. If hospital or clinic, what type of facility? (Circle one number)

1. Medical center (MEDCEN)
2. Medical Activity (MEDDAC)
3. Health Clinic or Troop Medical Clinic
4. Other ______________________________ (write-in)

---

34. If hospital or clinic, what type of unit? (Circle one number)

1. Emergency Department
2. Ambulance Section
3. Patient In-processing/Triage
4. Sick Call Clinic
5. Inpatient Unit
6. Other ______________________________(write-in)

---

35. If hospital or clinic, what is your position? (Circle one number)

1. Medical Specialist
2. Ambulance Aide/Driver
3. Other ______________________________ (write-in

---

36. During your entire military career, how long have you worked in TO&E units? (Circle one number)

1. Less than a year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

37. During your career <u>as a medic</u>, how long have you worked in TO&E units? (Circle one number)

1. Less than a year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

38. During your career, how long have you worked in a hospital or clinic? (Circle one number)

1. Less than a year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

39. During your career, how long have you worked in an emergency department (ED)? (Circle one number)

1. Less than a year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

40. How many years of **civilian** medical experience have you had? [Fill in the blank(s)]

___ **years** (EMT) ___ **years** (other medical)

---

41. Are you <u>currently</u> EMT-B certified? (Circle one number)

1. Yes...**go to question 42 & continue**
2. No....**go to question 44 & continue**

---

42. Where were you certified? (Circle one number)

1. 232nd MED BN, Ft. Sam Houston, TX
2. Current unit
3. Other ______________________________ (write-in)

---

43. How long have you been EMT-B certified? (Circle one number)

1. 2 years or less
2. 3 to 5 years
3. 6 to 9 years
4. 10 years or more

---

44. Have you been EMT certified before but had your certification expire? (Circle one number)

1. Yes...**go to question 45 and continue**
2. No....**go to question 46 and continue**

45. Circle below reasons your EMT certification may have expired. (Circle all that apply)

1. Continuing education classes appropriate for re-certification have not been available at the installation.
2. Time to attend continuing education classes appropriate for re-certification during duty hours has not been available.
3. Leadership does not show interest or support in keeping EMT certification current.
4. EMT certification and performance of my job are not related.
5. Certification is not tied to promotion or career progression.

---

46. Circle the category of your immediate supervisor. (Circle one number)

1. Enlisted.................**go to question 47 & continue**
2. Commission Officer...**go to question 48 & continue**

---

47. What is the MOS of your enlisted supervisor? (Circle one number)

1. 91B20 NCO
2. 91B30 NCO
3. 91C
4. Platoon Sergeant other than Army Medical Department
5. Other ______________________________ (write-in)

---

48. Who is the first commissioned officer in your chain of command? (Circle one number)

1. Medical Service (i.e. MSC)
2. Medical Specialist (i.e. MS, PA)
3. Registered Nurse (AN)
4. Medical (MC)
5. Other ____________________________ (write-in)

Social security number will be used in the research team's database to tract phase I responses with phase III responses and to correlate certain items with skill test scores. Social security numbers **will not** be used to track nor report individual responses.

49. Enter your social security number. _ _ _ — _ _ — _ _ _ _

Computer Systems. Please identify the types of computer systems available to 91B10 medics in <u>your unit</u>. This information will be used to understand the possibility of delivering distance learning training to the medic.

50. Please describe the types of computer systems available for you to use in your unit. Circle **Yes, No, or UK (don't know)** and fill in the **blanks** below.

Circle one letter for each category

	How many	LAN/Modem	Internet	CD-ROM
a. 386	___	Yes No UK	Yes No UK	Yes No UK
b. 486	___	Yes No UK	Yes No UK	Yes No UK
c. Pentium	___	Yes No UK	Yes No UK	Yes No UK

Written Comments or Concerns (optional)

Thank you for your time and participation!

APPENDIX B

School Achievement-Motivation Survey

[Intentionally left blank]

School Achievement Motivation Rating Scale (Chiu, 1997)

Please circle the number that corresponds to your behavior (**1 =Never; 2 = Seldom; 3 = Occasionally; 4 = Frequently and 5 = Always).**

1. Chooses to work above and beyond what is expected (extra credit, special project, etc.).	1___2___3___4___5
2. Brings in materials (pictures, newspaper clippings, old coins, etc.) related to classroom activities.	1___2___3___4___5
3. Is not prepared for class.	1___2___3___4___5
4. Sticks with a task until it is completed.	1___2___3___4___5
5. Attempts to solve problems that others have difficulty with.	1___2___3___4___5
6. Chooses minimum over maximum assignments.	1___2___3___4___5
7. Asks questions to better understand materials being studied or to aid in solving assignments.	1___2___3___4___5
8. Refuses to do assignments or homework.	1___2___3___4___5
9. Finds the answers to the assigned questions.	1___2___3___4___5
10. Participates in class discussion or activities.	1___2___3___4___5
11. Carelessly hurries through assignments.	1___2___3___4___5
12. Does something over again just to get it right.	1___2___3___4___5
13. Tries to avoid competitive situations.	1___2___3___4___5
14. Shows enthusiasm toward class studies.	1___2___3___4___5
15. Hesitates to undertake something that might lead to failing.	1___2___3___4___5

[Intentionally left blank]

APPENDIX C

Oddi Self-Directed Continual Learning Inventory

[Intentionally left blank]

THE ODDI

PURPOSE: This set of statements is designed to collect information on how you approach learning. There are no "right" or "wrong" answers to these statements. Rather, you should indicate on the scale provided how much you agree or disagree that each item describes your behavior.

HOW TO RESPOND: Read each item and choose the response number that best indicates how much you agree or disagree that the item describes your behavior. Do not think too long about the statement. Your first reaction will usually be your most accurate response. If you have difficulty responding, select the one response that is least objectionable and move on.

Please select only ONE response to every statement.

Please respond to EVERY statement.

HOW TO MARK RESPONSES: To mark your response, find the number of the response that best describes how much you agree that the item describes you.

7 – STRONGLY AGREE You would agree most of the time.

6 – MODERATELY AGREE. You would frequently agree.

5 – SLIGHTLY AGREE. You would occasionally agree

4 – UNDECIDED. You can't really agree or disagree with the item.

3 – SLIGHTLY DISAGREE. You would seldom agree.

2 – MODERATELY DISAGREE. You would infrequently agree.

1 – STRONGLY DISAGREE. You would almost never agree.

EXAMPLE: In the sample statement below, if you strongly agree with the item, you would circle the "7."

	Answer column
118. I am too old to learn anything new.	1 2 3 4 5 6 7

Please turn to the next page and begin.

	DISAGREE Strongly	DISAGREE Moderately	DISAGREE Slightly	UNDECIDED	AGREE Slightly	AGREE Moderately	AGREE Strongly
1. I successfully complete tasks I undertake.	1	2	3	4	5	6	7
2. My work is beneficial to society.	1	2	3	4	5	6	7
3. I seek involvement with others in school or work projects.	1	2	3	4	5	6	7
4. I make an effort to learn the meaning of new words I encounter.	1	2	3	4	5	6	7
5. My values and beliefs help me to meet daily challenges.	1	2	3	4	5	6	7
6. I seek the views of others when I am curious about something.	1	2	3	4	5	6	7
7. I have a hobby (such as writing, painting, or making things) which provides me with a means of self-expression.	1	2	3	4	5	6	7
8. I am able to resist the efforts of others to pressure me into doing something I don't want to do.	1	2	3	4	5	6	7
9. I regularly read professional journals.	1	2	3	4	5	6	7
10. I select serious literature (such as history, biographies, or the classics) for my reading pleasure.	1	2	3	4	5	6	7
11. I volunteer for new assignments.	1	2	3	4	5	6	7
12. I'm not comfortable with my performance on an assignment until my supervisor, teacher, or colleague says it's acceptable.	1	2	3	4	5	6	7
13. I have been an eager reader since childhood.	1	2	3	4	5	6	7
14. After I read a book or see a play or a film, I talk to others to see what they think about it.	1	2	3	4	5	6	7

	DISAGREE				AGREE		
	Strongly	Moderately	Slightly	UNDECIDED	Slightly	Moderately	Strongly
15. I resist judging others (such as new managers or teachers) until I've had an opportunity to	1	2	3	4	5	6	7
associate with them.	1	2	3	4	5	6	7
16. When I do a job well, it's because I have been prepared and have put in personal effort.	1	2	3	4	5	6	7
17. I find it difficult to judge if I've performed well or poorly on a task such as giving a speech, writing a paper, or answering a test question.	1	2	3	4	5	6	7
18. Once I start to work on a task, I keep working until it's done to my satisfaction.	1	2	3	4	5	6	7
19. I read an average of one or more national news magazines each week.	1	2	3	4	5	6	7
20. When in school, I tend to have difficulty in estimating whether or not the teacher is going to like my work.	1	2	3	4	5	6	7
21. I find it useful to think about people (or refer to them) according to categories (such as by education, occupation, race, or ethnic background).	1	2	3	4	5	6	7
22. I work more efficiently if I have freedom to regulate myself.	1	2	3	4	5	6	7
23. I make an effort to meet new people.	1	2	3	4	5	6	7
24. Being afraid to take a chance has prevented me from doing something I have wanted to do at some time in my life.	1	2	3	4	5	6	7

[Intentionally left blank]

APPENDIX D

Life-Saving Assessment - Test

[Intentionally left blank]

MT2K
Assessment of Life Saving Skills

1. The best places to examine skin color in adults are the
    - A. inside of the lower eyelids and the nostrils.
    - B. inside of the cheek and the nail beds.
    - C. nail beds and the upper chest.
    - D. the toes and lips.

---

2. Blood loss, shock, low blood pressure (hypotension), or emotional distress may result in skin that is
    - A. flushed.
    - B. gray.
    - C. pale.
    - D. jaundiced.

---

3. The normal respiration rate for an adult at rest is
    - A. 12 to 24.
    - B. 12 to 20.
    - C. 20 to 30.
    - D. 24 to 40.

---

4. The normal pulse rate for an adult is
    - A. 60 to 100.
    - B. 70 to 110.
    - C. 80 to 120.
    - D. 90 to 140.

---

5. Signs of labored breathing include all of the following **except**
    - A. increase in the work of breathing.
    - B. use of accessory muscles.
    - C. retractions above the collarbones.
    - D. delayed capillary refill.

6. A sound made by the patient that usually indicates the need to suction the airway is called

   A. gurgling.
   B. crowing.
   C. stridor.
   D. wheezing.

---

7. Cold, dry skin is frequently associated with

   A. high fever and/or heat exposure.
   B. exposure to cold.
   C. shock and anxiety.
   D. a body that is losing heat.

---

8. Hot, dry skin is frequently associated with

   A. high fever, heat exposure.
   B. exposure to cold.
   C. shock and anxiety.
   D. heat loss.

---

9. A rigid or tender abdomen is a sign of

   A. an evisceration.
   B. patient guarding.
   C. gastric distention.
   D. over inflation of the BVM.

---

10. The most reliable sign of spinal cord injury in the conscious patient is

    A. pain with movement.
    B. impaired breathing.
    C. tenderness on the spine.
    D. paralysis of extremities.

---

11. The skin of a patient with inadequate breathing will most likely be ____ in color and feel ____

    A. pale: cool and dry.
    B. red: hot and clammy.
    C. yellow: warm and dry.
    D. blue: cool and clammy.

Enter your social security number. ___ ___ ___ – ___ ___ – ___ ___ ___ ___

12. You encounter a casualty who is unresponsive. You hear a loud snoring sound coming from the mouth. The **most** important action is to

    A. open the airway.

    B. apply oxygen.

    C. start an IV.

    D. check for a pulse.

---

13. If a patient is experiencing breathing difficulty, but is breathing adequately, it is usually best to place him in the _____ position.

    A. tripod

    B. supine

    C. sitting-up

    D. recovery

---

14. The means of providing artificial ventilation are

    A. pocket face mask with supplemental oxygen.

    B. two-person bag-valve mask with supplemental oxygen.

    C. flow-restricted, oxygen-powered ventilator.

    D. one-person bag-valve mask with supplemental oxygen.

---

15. The adequate rate of artificial ventilations for a non-breathing adult patient is ___ breaths per minute.

    A. 10

    B. 12

    C. 16

    D. 20

---

16. To open the airway of a patient with no suspected neck trauma, the medic should use a

    A. jaw-thrust maneuver.

    B. modified jaw-thrust maneuver.

    C. head-tilt, neck-lift maneuver.

    D. head-tilt, chin-lift maneuver.

17. If something is placed in the patient's throat, the gag reflex causes the patient to

A. take deep breaths.

B. pass out.

C. vomit or retch.

D. all of the above.

---

18. An oral or nasal airway should be

A. cleaned for re-use after the call.

B. inserted in all critically injured patients.

C. used to keep the tongue from blocking the airway.

D. used in order to prevent the need for suctioning.

---

19. An oropharyngeal airway of proper size will extend from the

A. corner of the patient's mouth to the tip of the earlobe.

B. lips to the larynx.

C. nose to the angle of the jaw.

D. none of the above.

---

20. When a patient begins to vomit, it is essential that the medic have a _______ ready to go.

A. pocket mask.

B. oxygen tank.

C. blood pressure cuff.

D. suction unit.

---

21. A reliable sign in shock is pulse rate. The pulse rate in shock usually

A. goes down.

B. goes up.

C. stays the same.

D. is absent.

22. In late shock, the blood pressure usually

A. goes up.

B. stays the same.

C. goes down.

D. is absent.

---

23. As a medic, you are caring for a casualty with severe, spurting blood from the arm. You must also carry the casualty by yourself 2,000 meters (about one mile) with a firemen's carry. The best method of bleeding control is

A. direct pressure.

B. elevation.

C. pressure point.

D. tourniquet.

---

24. Capillary refill time (blanch test) is a good indicator of shock. A capillary refill time of 2 minutes is

A. normal.

B. too long.

C. too short.

D. in the intermediate range.

---

25. Additional signs of shock may include any of the following **except**

A. thirst.

B. dilated pupils.

C. flushed, warm skin.

D. bluish color (cyanosis) around the lips and nailbeds.

---

26. Once a tourniquet is in place, it must

A. be covered immediately to prevent accidental removal.

B. not be removed or loosened unless ordered by medical doctor.

C. be loosened every 15 minutes to dislodge clots.

D. be used under pneumatic anti-shock garment.

27. When is it inappropriate to use elevation to assist in bleeding control?

   A. If you suspect musculoskeletal injuries.

   B. As you apply direct pressure.

   C. While trying to bandage an extremity.

   D. When a patient is found lying down.

---

28. The major methods to control external bleeding include all of the following **<u>except</u>**

   A. direct pressure.

   B. elevation.

   C. pressure points.

   D. vessel clamps.

---

29. The initial dressing should not be removed from a bleeding wound because it

   A. can become a biohazard.

   B. takes too long to remove.

   C. is a necessary part of clot formation.

   D. may increase the chance of infection.

---

30. Signs of internal bleeding include all of the following **<u>except</u>**

   A. slow heartbeat (bradycardia) and a flushed face.

   B. vomiting a coffee ground-like substance.

   C. dark, tarry stools.

   D. tender, rigid, or distended abdomen.

---

31. When starting an IV, the bevel (sharp point) of the needle when entering the skin

   A. faces sideways.

   B. faces down.

   C. faces up.

   D. does not matter which way the bevel faces.

32. Morphine is a strong painkiller and is used to relieve pain in wounded soldiers. A serious side effect of morphine is

   A. excessive urination.

   B. fast heartbeat (tachycardia).

   C. anxiety and restlessness.

   D. low blood pressure (hypotension).

---

33. When inspecting an IV fluid bag, always check for

   A. expiration date.

   B. clarity of the fluid.

   C. leaks in the bag.

   D. all of the above.

---

34. When removing the protective covering from the port of the fluid bag and the protective covering from the spiked end of the tubing,

   A. only touch the ends with gloves.

   B. be very careful to maintain sterility.

   C. hold the bag lower than the tubing.

   D. it is not necessary to protect the end of this tubing.

---

35. Why is the IV line flushed prior to using it on a patient?

   A. It prevents the patient from developing a blood clot.

   B. It helps maintain sterility of the entire system.

   C. It prevents introducing an air embolism.

   D. The fluid will run much faster without air in the line.

---

36. Interruptions in the flow of an IV can be caused by each of the following <u>except</u>

   A. a rise in the patient's blood pressure.

   B. a closed flow regulator.

   C. a constricting band left on the patient's arm.

   D. kinked tubing.

37. When an IV needle has punctured both walls of the vein and fluid is leaking out around the vein, this

is called

A. evisceration.

B. infiltration.

C. necrosis.

D. overinflation.

---

38. An intravenous line inserted into a vein so that blood, fluids, or medications can be administered directly into a patient's circulation is called

A. a photoelectric device.

B. a drip chamber.

C. a needle port.

D. an IV.

---

39. A drip chamber used when minimal flow of fluid is needed is called a

A. chamber drip.

B. macro drip.

C. micro drip.

D. flow drip.

---

40. Proper use of a tourniquet for starting an IV involves

A. having the tourniquet tight enough to occlude venous flow.

B. locating the tourniquet 2 inches above the site.

C. having the tourniquet tight enough to occlude arterial flow.

D. keeping the tourniquet tails near the site for easy release.

41. A casualty on the nuclear/ biological/chemical (NBC) battlefield has the following symptoms: shortness of breath, weakness and paralysis, double vision, and difficulty talking. He most likely is suffering from

A. botulinum poisoning.

B. vesicant (blister) agent.

C. radiation sickness.

D. anthrax.

42. A soldier has been exposed to nerve agent and is experiencing mild wheezing, blurry vision, and runny nose. He is able to stand and walk. The **best** treatment for this casualty is

A. rest, as he will recover in a few hours.

B. one Mark I Kit (atropine and 2-pam chloride).

C. one Mark I Kit and valium (diazepam).

D. three Mark I Kits.

43. A casualty has been exposed to the biological agent anthrax. The casualty is unresponsive and his skin is cool, pale, and moist. His pulse is 130 and blood pressure 80/40 and temperature is 104 degrees Fahrenheit (40 degrees centigrade). The **best** treatment for this casualty is

A. start and IV and administer 1,000 milliliters of saline to improve blood pressure.

B. administer tylenol (acetaminophen) to counteract fever.

C. administer atropine to reduce the pulse rate.

D. administer epinephrine to improve the blood pressure.

44. A unit is attacked by an unknown chemical/biological agent. Casualties have the following symptoms: Shortness of breath, muscle twitching, runny nose, nausea, vomiting, and diarrhea. Pupils are pinpoint and the skin is moist. The most likely agent is

A. botulinum toxin.

B. cyanide.

C. pulmonary agent.

D. nerve agent.

45. A casualty has vesicant (blister) agent in her eye. The **best** treatment is to decontaminate the eye with

A. the M291 personal decontamination kit.

B. dilute hypochlorite solution (0.5%) used for skin and mask decontamination.

C. plain water from a canteen or lister bag.

D. eye patching initially and then with sterile saline once the casualty reaches the hospital.

---

46. A casualty has just been exposed to radiation from a nuclear bomb. The casualty received first degree burns to his arms, back, and head. Your triage category for this casualty is

A. immediate.

B. delayed.

C. minimal.

D. expectant.

---

47. A casualty has been exposed to the chemical agent cyanide. The casualty is cyanotic (blue in color) and gasping for air. The **best** treatment is

A. nothing as this casualty will likely recover on his own.

B. administer high flow oxygen by mask.

C. begin chest compressions immediately.

D. administer one Mark I Kit (atropine and 2-pam chloride) immediately.

---

48. A casualty was directly exposed to the radiation from a nuclear blast about six hours ago. She is confused, agitated, and is having vomiting and diarrhea. This casualty has received a

A. minimal dose of radiation and will likely recover.

B. moderate dose of radiation but will likely recover after hospitalization for 3-4 days.

C. moderate dose of radiation but may need 3-4 weeks of hospitalization to recover.

D. high dose of radiation and will likely die.

---

49. A nerve agent casualty presents unconscious and having seizures (convulsions). The **best** treatment is

A. no treatment as the seizures usually stops by themselves.

B. three Mark I Kits and Valium (diazepam).

C. one Mark I Kit (atropine and 2-pam chloride).

D. intravenous saline 500 milliliters.

50. A casualty on a nuclear/biological/chemical (NBC) battlefield presents with confusion, difficulty breathing, profuse sweating, runny nose, large amounts of secretions, and pinpoint pupils. The casualty most likely has

   A. nerve agent poisoning.

   B. radiation sickness.

   C. cyanide poisoning.

   D. botulinum (biological agent) poisoning.

Answer Key
Life Saving Assessment

Item Number	Answer	Content Tested
1	B	Assessment
2	C	
3	B	
4	A	
5	D	
6	A	
7	B	
8	B	
9	B	
10	D	
11	D	Airway
12	A	
13	C	
14	A	
15	B	
16	D	
17	C	
18	C	
19	A	
20	D	
21	B	Shock and Bleeding Control
22	C	
23	D	
24	A	
25	C	
26	B	
27	A	
28	D	
29	C	
30	A	
31	C	IV's
32	D	
33	D	
34	B	
35	C	
36	A	
37	B	
38	D	
39	C	
40	B	
41	A	NBC
42	B	
43	A	
44	D	
45	C	
46	C	
47	B	
48	D	
49	B	NBC
50	A	

APPENDEX E

Performance Skill Sheets for the Core Life-Saving Skills

[Intentionally left blank]

Student Name:	Date:
Student's Social Security Number:	Class #:
Station Time: 10 Minutes	Start Time:
Examiners Name:	Finish Time:

PATIENT ASSESSMENT/MANAGEMENT-TRAUMA

		Points Possible	Points Awarded
* Takes or verbalizes body substance isolation precautions		1	
SCENE SIZE-UP			
Determines the scene is safe		1	
Determines the mechanism of injury		1	
Determines the number of patients		1	
Requests additional help if necessary		1	
*Considers stabilization of spine		1	
INITIAL ASSESSMENT			
Verbalized general impression of patient		1	
Determines responsiveness		1	
Determines chief complaint apparent life treats		1	
* assesses airway and breathing	Assessment Initiates appropriate oxygen therapy Assures adequate ventilation Injury management	1 1 1 1	
*Assesses circulation	Assess for and controls major bleeding Assesses pulse Assesses skin (color, temperature, and condition)	1 1 1	
*Identifies priority patients, makes transport decision		1	
FOCUSED HISTORY AND PHYSICAL EXAM/RAPID TRAUMA ASSESSMENT			
Selects appropriate assessment (focused or rapid assessment)		1	
Obtains or directs assistant to obtain baseline vital signs		1	
Obtains SAMPLE history			N/A
DETAILED PHYSICAL EXAMINATION			
Assesses the head	Inspects and palpates the scalp and ears Assesses the eyes Assess the facial area including oral & nasal area	1 1 1	
Assesses the neck	Inspects and palpates the neck Assesses for JVD Assesses for tracheal deviation	1 1 1	
Assess the chest	Inspects Palpates Auscultates the chest	1 1 1	
Assesses the abdomen pelvis	Assesses the abdomen Assesses the pelvis Verbalizes assessment genitalia/perineum as needed	1 1 1	
Assesses the extremities	1 point for each extremity includes inspection, palpation, & assessment of pulses, sensory and motor activity	4	
Assesses the posterior	Assesses thorax Assesses lumbar	1 1	
Manages secondary injuries and wounds appropriately **1 point for appropriate management of secondary injury/wound**		1	
Verbalized reassessment of the vital signs		1	
	TOTAL	**39**	

CRITICAL CRITERIA

___ Did not take or verbalize body substance isolation precautions.
___ Did not assess for spinal protection.
___ Did not provide for spinal protection when indicated.
___ Did not provide high concentration of oxygen.
___ Did not find or manage problems associated w/airway, breathing, hemorrhage, or shock (hypoperfusion).
___ Did not differentiate patients needing transportation versus continued on scene assessment.
* ___ Did other detailed physical examination before assessing airway, breathing, and circulation limit
___ Did not transport patient within 10 minute time

National Registry Skill Sheets

[Intentionally left blank]

Oxygen Administration, Airway, Upper Airway Adjuncts, Suctioning, Mechanical Aids To Breathing and Bag-Valve Mask (BVM) Skill Sheet

Student's Name:	Date:
Student's Social Security Number:	Class #:
Station Time: 5 Minutes	Start Time:
Examiner's Name:	Finish Time:

Criteria	Points Possible	Points Awarded
Oxygen Administration Note: The Examiner must advise the candidate the patient needs to have oxygen set-up for use		
*Takes or verbalizes body substance isolation procedures	1	
*Assembles regulator and flowmeter	1	
*Opens oxygen tank	1	
*Checks for leaks	1	
Checks tank pressure	1	
Establishing a Manual Airway Note: The Examiner must advise the candidate to open the patent's airway by using the head-tilt, chin-lift, and jaw-thrust maneuvers		
Opens airway with head-tilt maneuver	1	
Opens airway with chin-lift maneuver	1	
Opens airway with jaw-thrust maneuver	1	
Note: The examiner asks what situations the jaw-thrust maneuver is used		
Verbalizes jaw-thrust maneuver is used on unconscious patients or patients with possible head, neck, or spinal injuries	1	
Upper Airway Adjuncts Note: The Examiner must advise candidate to insert an oropharyngeal airway		
Selects appropriate oropharyngeal airway size	1	
*Measures airway	1	
*Inserts airway without pushing the tongue posteriorly	1	
Suctioning Note: The Examiner must advise the candidate is gurgling and needs to be suctioned.		
Removes oropharyngeal airway	1	
*Inserts suction tip without suction	1	
*Applies suction to oropharynx/nasopharynx	1	
Note: The Examiner must advise candidate to insert a nasopharyngeal airway		
*Selects appropriate nasopharyngeal airway	1	
Verbalizes lubrication of the nasal airway	1	
*Fully inserts the airway with the bevel facing toward the septum	1	
Mechanical Aids to Breathing Note: The Examiner must advise candidate to use a nonrebreather mask to give the patient oxygen.		
*Attaches nonrebreather mask to oxygen	1	
*Prefills reservoir	1	
*Adjusts liter flow to 12 liter/minute or greater	1	
Applies and adjusts mask to the patient's face	1	
Note: The Examiner must advise candidate the physician has ordered the application of a nasal cannula to the patient		
*Attaches nasal cannula to oxygen	1	
*Adjusts liter flow to 6 liters/minute or less	1	
Applies and adjusts nasal cannula to the patient	1	

Note: The Examiner must advise candidate the patient has apnea and needs a bag-valve mask applied.		
Selects appropriate size mask	1	
Creates a proper mask-to-face seal	1	
*Ventilates patient at no less than 800 ml volume for at least **30 seconds**	1	
*Connects reservoir to oxygen	1	
*Adjusts liter flow to 15 liter/minute or greater	1	
Note: The examiner must advise the candidate to discontinue oxygen therapy.		
Informs patient of discontinuation of oxygen therapy	1	
Removes bag-valve-mask	1	
Shuts off regulator	1	
Relieves the pressure within the regulator	1	
TOTAL	**34**	

Critical Criteria

__ Did not take or verbalize body substance isolation procedures
__ Did not assemble the oxygen tank and regulator without leaks
__ Did not obtain a patent airway with oropharyngeal airway
__ Did not obtain a patent airway with nasopharygeal airway
__ Did not demonstrate an acceptable suction technique
__ Inserted any adjunct in a manner dangerous to the patient
__ Attaches nonrebreather mask to oxygen
__ Did not prefill the reservoir bag
__ Did not adjust the device to the correct liter flow for the nonrebreather mask (12 L/min. or more)
__ Attaches nasal cannula to oxygen
__ Did not adjust the device to the correct liter flow for the nasal cannula (6 L/min. or less)
__ Did not immediately ventilate the patient with the bag-valve-mask
__ Interrupted ventilations for more than 20 seconds
__ Attaches bag-valve mask reservoir to oxygen
__ Did not provide high concentration of oxygen for bag-valve-mask (15 L/min. or more)
__ * Did not allow adequate exhalation

Documenting Comments:

Student Name:	Date:
Student's Social Security Number:	Class #:
Station Time: 10 Minutes	Start Time:
Examiners Name:	Finish Time:

BLEEDING CONTROL/SHOCK MANAGEMENT

	Points Possible	Points Awarded
* Takes or verbalizes body substance isolation precautions	1	
Applies direct pressure to the wound	1	
Elevates the extremity	1	
NOTE: The examiner must now inform the candidate that the wound continues to bleed.		
Applies an additional dressing to the wound	1	
NOTE: The examiner must now inform the candidate that the wound still continues to bleed. The second dressing does not control the bleeding.		
Locates and applies pressure to appropriate arterial pressure point	1	
NOTE: The examiner must now inform the candidate that the bleeding is controlled.		
Bandage the wound	1	
NOTE: The examiner must now inform the candidate that the patient is showing signs and symptoms indicative of hypoperfusion.		
Properly positions the patient	1	
* Applies high-concentration oxygen	1	
Initiates steps to prevent heat loss from the patient	1	
* Indicates need for immediate transportation	1	
TOTAL	10	

CRITICAL CRITERIA

___ Did not take or verbalize body substance isolation precautions.
___ Did not apply high concentration of oxygen.
* ___ Applied tourniquet before attempting other methods of bleeding control.
* ___ Did not control hemorrhage in a timely manner.
___ Did not indicate a need for immediate transportation.

[Intentionally left blank]

Intravenous (IV) Therapy

Skill Sheet

Student Name:	Date:
Student's Social Security Number:	Class #:
Station Time: 10 Minutes	Start Time:
Examiners Name:	Finish Time:

Criteria – Starting an Intravenous (IV) & Administering Fluids	Points Possible	Points Awarded
* States or takes body substance precautions	1	
Gathers appropriate equipment	1	
* Checks IV bag for:		
a) Expiration date	1	
b) Correct solution	1	
c) Damage to the bag	1	
d) Signs of solution contamination	1	
Use of aseptic technique when connecting IV bag to IV tubing and keeping the line sterile	1	
Labels and times bag	1	
Correctly identifies patient	1	
Locates appropriate site	1	
Applies tourniquet	1	
* Cleans skin using aseptic technique	1	
* Performs venipuncture with aseptic technique	1	
* Performs venipuncture with bevel of the needle up	1	
* Connects IV tubing to IV catheter	1	
* Releases tourniquet	1	
Initiates drip rate	1	
Secures catheter in position	1	N/A
* Disposes of equipment as appropriate	1	
* Documents appropriately	1	
* Watches for complications	1	
TOTAL	**22**	

Documenting Comments:

[Intentionally left blank]

APPENDIX F

Combat Medic Direct-Line Supervisor Questionnaire

[Intentionally left blank]

Direct-Line Supervisor & Trainer
Phase I

Directions: If you are not the direct line supervisor of two or more medics or not responsible for the training of two or more medics, please notify a research team member now. Circle the number or item best describing your answer. Some answers may be used more than once. All of your answers will be confidential. **No names,** please.

Section One

EXPERIENCED MEDICS

Proficiency is the knowledge and skill to perform to a standard safely without assistance or supervision.

1. From options 1 through 6 below, select the number best describing the proficiency experienced 91B10 medics in your unit performs skills listed below.

Options:

1. Unable to perform
2. Perform with continuous assistance
3. Perform with moderate assistance
4. Perform with minimal assistance
5. Proficient, perform the skill safely without assistance
6. Not observed

Skills	Circle one number				
a. Assessing the combat casualty	1	2	3	4	5
b. Managing the airway	1	2	3	4	5
c. Controlling bleeding	1	2	3	4	5
d. Inserting an IV	1	2	3	4	5
e. Caring for casualty in a NBC environment	1	2	3	4	5

Proficiency is the knowledge and skill to perform to a standard safely without assistance or supervision.

2. From options 1 through 5 below, select the number best describing the percentage of experienced 91B10 medics who can perform medic skills listed below proficiently.

Options:

1. 0% perform to proficiency
2. 25% perform to proficiency
3. 50% perform to proficiency
4. 75% perform to proficiency
5. 100% perform to proficiency

	Circle one number				
a. Assessing the combat casualty	1	2	3	4	5
b. Managing the airway	1	2	3	4	5
c. Controlling bleeding	1	2	3	4	5
d. Inserting an IV	1	2	3	4	5
e. Caring for casualty in a NBC environment	1	2	3	4	5

Unit Resources are time, personnel, computers, computer software, audio-visual equipment, medical simulators, medical supplies and equipment, actual patients, and simulated patients.

3. From options 1 through 5 below, describe the real-time frequency in the last 12 months your unit trained the skills listed.

Options:

1. No training done
2. Weekly training
3. Monthly training
4. Quarterly training
5. Annual training

	Circle one number				
a. Life saving skills	1	2	3	4	5
b. Military medic skills (i.e. transport casualty, preventive medicine)	1	2	3	4	5
c. Soldier skills (i.e. preventive maintenance, weapons familiarization, field radio)	1	2	3	4	5

4. Select from options 1 through 6 the number best describing the last time your 91B10 medics completed intensive training in EMT-B, MPT, BTLS and an ARTEP.

<u>Options</u>:

1. No training done
2. Less than 1 month ago
3. 1 - 3 months ago
4. 4 - 6 months ago
5. 7 - 12 months ago
6. More than 1 year ago

<u>Write one number in each blank</u>

____ EMT training	____ ARTEP exercise
____ MPT training	____ EFMB training
____ BTLS training	____ Inservice/Continuing Education

---

5. Select from options 1 through 5 the number best describing the approximate time your 91B10 medics trained the five types of skills listed below. Your estimate of training time for the 5 skills should equal 100%.

<u>Options</u>:

1. No training done
2. 25% of training time
3. 50% of training time
4. 75% of training time
5. 100% of training

<u>Write one number in each blank</u>

_____ **life saving skills** such as assessing casualty, managing airway, controlling bleeding, inserting an IV, with IV fluids, and managing a NBC casualty

_____ **military medic skills** such as transporting the casualty, field documentation, and preventive medicine skills in the field

_____ **soldier skills** such as preventive maintenance checks, weapons, familiarization, operating a field radio, day/night navigation, surviving an NBC environment on the battlefield

_____ **sick call/clinic skills** such as assisting with troop medical clinic care, patient assessment, providing temporary relief of minor symptoms

_____ **indirect time** such as preventive maintenance checks on vehicles, grounds and barracks maintenance, supply and hand receipt accountability

6. Select from options 1 through 5, the number best describing the effectiveness of training resources you use to train 91B10 medics in **life saving skills** such as assessing casualty, managing airway, controlling bleeding, inserting an IV with IV fluids, and managing a NBC casualty.

Options :

1. Not available
2. Not used
3. Not effective
4. Moderately effective
5. Highly effective

Write one number in each blank

_____	Mannequins	_____	Simulators such as an IV arm
_____	Video tapes	_____	Computer simulations
_____	Moulage	_____	Field exercises
_____	Real patients	_____	Textbooks

_____ Other ________________________________ (write-in)

---

7. From options 1 through 5 below, select your 91B10 medic's proficiency in performing computer skills listed below.

Options:

1. Unable to perform
2. Perform with continuous assistance
3. Perform with moderate assistance
4. Perform with minimal assistance
5. Proficient in computer skills, no assistance needed

Computer Skills	**Circle one number**				
a. Use E-mail to send and receive messages	1	2	3	4	5
b. Word processing programs such as Word or Word Perfect	1	2	3	4	5
c. Surf the Internet	1	2	3	4	5
d. Operate hospital automated systems such as CHCS (Composite Health Care System)	1	2	3	4	5

Patient contact is interacting with patients and performing medic skills on patients.

8. Do 91B10 medics have patient contact in a hospital or clinic as part of on-going medic training? (Circle one number)

1. Yes...**go to question 9 and continue**
2. No....**go to question 10 and continue**

9. In the last year, how often did your 91B10 medics interact with patients? (Circle one number)

1. 5 days or less
2. 6 - 14 days
3. 15 - 30 days
4. 31 - 90 days
5. More than 90 days

Section Two

New Medic

New medics are 91B10 graduates from the 91B10 course with less than 1 year experience.

Proficiency is the knowledge and skill to perform to a standard safely without assistance or supervision.

10. From options 1 through 6, select the number best describing the proficiency new medics in your unit perform the skills listed below.

Options:

1. Unable to perform
2. Perform with continuous assistance
3. Perform with moderate assistance
4. Perform with minimal assistance
5. Proficient, perform the skill safely without assistance
6. Not observed

	Circle one number					
a. Assessing the combat casualty	1	2	3	4	5	6
b. Managing the airway	1	2	3	4	5	6
c. Controlling bleeding	1	2	3	4	5	6
d. Inserting an IV	1	2	3	4	5	6
e. Caring for casualty in a NBC environment	1	2	3	4	5	6

11. The AMEDD Center and School prepares new medics to perform in a combat environment? (Circle one number)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

12. The AMEDD Center and School prepares new medics to perform in humanitarian missions and health operations other than war? (Circle one number)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

13. The AMEDD Center and School prepares new medics to perform in combat support hospitals? (Circle one number)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

14. The AMEDD Center and School prepares new medics to perform in emergency departments or ambulance transport? (Circle one number)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

15. The AMEDD Center and School prepares new medics to perform in inpatient wards? (Circle one number)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

16. The AMEDD Center and School prepares new medics to perform in sick call clinics? (Circle one number)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

Unit Train-up is training or retraining by the unit of new medics to improve medic performance.

17. How much patient contact time do new medics in your unit need to **train-up** 91B10 medic skills to proficiency each year? (Circle one number)

1. 5 days or less
2. 6 - 14 days
3. 15 - 30 days
4. 31 - 90 days
5. More than 90 days

---

18. Circle all options from 1 to 5 describing your unit's ability to **train-up** new medics for the skills listed below.

Options:
1. Our unit lacks access to patients
2. Our unit lacks medical treatment equipment and supplies
3. Our unit lacks training aids
4. Our unit lacks command support
5. Our unit can train-up new medics to proficiency

	Circle all options that apply				
a. Life saving skills	1	2	3	4	5
b. Military medic skills (transport casualty, preventive medicine)	1	2	3	4	5
c. Soldier skills (navigation, field radio)	1	2	3	4	5

---

19. From options 1 through 5, select the number best describing the percentage of 91B10 medics **your unit** trains or trains-up from familiarity to proficiency the skills listed below.

Options:
1. 0% train-up to proficiency
2. 25% train-up to proficiency
3. 50% train-up to proficiency
4. 75% train-up to proficiency
5. 100% train-up to proficiency

	Circle one number				
a. Assessing the combat casualty	1	2	3	4	5
b. Managing the airway	1	2	3	4	5
c. Controlling bleeding	1	2	3	4	5
d. Inserting an IV	1	2	3	4	5
e. Caring for casualty in a NBC environment	1	2	3	4	5

20. From the options below, prioritize the 91B10 skills for the new medic that should be taught to **proficiency** at the 91B10 course.

Options:
1. Not a priority to be taught to proficiency
2. Low priority to be taught to proficiency
3. Moderate priority to be taught to proficiency
4. High priority to be taught to proficiency

Write one number on the blank line beside the skill

___ **life saving skills** such as assessing casualty, managing airway, control bleeding, insert IV with IV fluids, and managing a NBC casualty

___ **military medic skills** such as transports casualty, field documentation, preventive medical skills such as inspecting water containers and disposing of medical waste

___ **soldier skills** such as disinfecting water, vehicle preventive maintenance checks, weapon familiarization, operating a field radio, day/night navigation, surviving a NBC environment on the battlefield

___ **patient care skills** such as insert and remove nasogastric tube, insert and remove urinary catheter, assist patient to perform activities of daily living

___ **sick call/clinic skills** such as assist with troop medical clinic care, patient assessment, provide temporary relief of minor symptoms

___ **information management skills** such as E-mail, Internet, word processing

Valued Team Member is a member who is respected and included by others to train and perform the mission.

21. Circle the option below best describing the new medic's level of acceptance as a valued team member by the non-medic members in your unit. (Circle one number)

1. Not accepted
2. Low acceptance
3. Moderate acceptance
4. High acceptance

22. Select the option best describing soldier skills and duties to be prioritized at the 91B10 course to assist new medic's initial fit into the military culture and mission of your unit.

Options:
1. Not a priority
2. Low priority
3. Moderate priority
4. High priority

Write one number on the blank line beside the skill

___ Military courtesy

___ APFT (physical fitness)

___ Day/night navigation

___ Weapons familiarization

___ Surviving on a NBC battlefield

___ Drill & Ceremony

___ CQ

___ Code of War & military conduct

___ Operating field radio

___ Other ____ (write-in)

---

23. Select the option below, best describing factors contributing to 91B10 medic's acceptance by non-medic soldiers in your unit.

Options:
1. Not a priority
2. Low priority
3. Moderate priority
4. High priority

Write one number on the blank space

___ Appears skilled

___ Understands and behaves according to informal rules of unit

___ Demonstrates interest in filling mission requirements other than medic mission

___ Demonstrates ability to adapt

___ Demonstrates ability to be open-minded

___ Appears to be a self-learner

___ Other ____(write-in)

SKILLS

If you work in a hospital or clinic go to question 24 and continue.
If you work in a TO&E unit go to question 25 and continue.

24. Where do 91B10 medics work in your hospital or clinic? (Check all that apply.)

___ Clinic

___ Sick Call Clinic

___ Emergency Department

___ Ambulance Section

___ Operating Room

___ Critical Care Unit

___ Wards

___ Other ______________________________ (write-in)

---

25. What skills are practiced by at least 50% of the 91B10 medics in your hospital or clinic? Check all that apply.

___ Vital Signs
___ Lift/Transfer patients
___ Take patient history
___ Perform physical examination
___ Perform triage

___ Create a sterile field
___ Put on sterile gloves
___ Assist with activities of daily living
___ Assist with procedures
___ Perform communication skills

___ Perform manual airway skills (i.e. chin-lift, head-tilt, etc.)
___ Perform CPR
___ Perform endotracheal intubation
___ Administer oxygen

___ Splint patient's extremity
___ Apply bandages/dressings
___ Apply hot/cold packs
___ Document patient care activities

___ Start an IV
___ Monitor patient on IV fluids
___ Insert/remove urinary catheters
___ Insert/remove nasogastric tubes
___ Other ______________________________ (write-in)

26. Should new medics be certified at the basic emergency medical technician-basic level (EMT-B) upon graduation from the 91B10 course? (Circle one number)

1. Yes…**go to question 27 & continue**
2. No….**go to question 28 and continue**

---

27. Circle below reasons EMT-Basic certification is needed for the new medic upon graduation from the 91B10 course. (Circle all that apply then **go to question 29 and continue**)

1. EMT-Basic certification is a recognized measure of proficiency in medic skills.
2. EMT-Basic certification may allow access to civilian medical facilities in our area that are not currently open.
3. EMT-Basic certification supports the medic's ability to transfer emergency medic skills to the military setting.
4. EMT-Basic certification is important for operations other than war for humanitarian and disaster assistance.
5. Units do not have the resources of time, personnel, or money to train-up 91B10 graduates to certify.
6. Other ____ (write in)

28. Circle below reasons EMT-Basic certification is not needed for the new medic upon graduation from the 91B10 course. (Circle all that apply and **go to question 29**)

1. EMT-Basic certification and medic's mission are not related.
2. EMT-Basic certification will not open access to patients in civilian medical facilities in our area.
3. EMT-Basic certification interferes with the medic's ability to transfer emergency medic skills to the military setting.
4. New medics receive all the training needed at the 91B10 course to perform the combat mission without EMT-Basic certification.
5. Leadership does not show interest in keeping certification current.
6. EMT-Basic certification is not tied to promotion or career progression.
7. Other ____(write in)

Section Three

DEMOGRAPHICS

Demographics will help researchers interpret results from your **installation** and <u>will not</u> be analyzed to report differences about individuals. Researchers will report information about age, gender, ethnicity, and educational background as group data to describe whether those participating in the study represent a cross-section of enlisted and officer views at each installation. Please answer **all** of the items. Your answers are important and confidential.

29. What is your gender? (Circle one number)

1. Male
2. Female

30. What is your age? ______ (write on the line)

---

31. What is your ethnic identification? (Circle one number)

1. African-American
2. Asian-American
3. Caucasian-American
4. Hispanic-American
5. American Indian
6. Other ______________________________(write-in)

---

32. What is the **highest** educational level that you have completed? (Circle one number)

1. Less than high school
2. High school diploma or GED
3. Some college, no degree
4. Some college, license, or certificate
5. College, associate's degree (i.e. AA, AS)
6. College, Bachelor's degree (i.e. BA, BS, BSN)
7. Graduate degree, advanced (i.e. MBA, MA, MS, MSN, MPH)
8. Graduate degree, professional (i.e. Ph.D., MD, DO)

---

33. Circle the number indicating your current grade

1. E - 4	5. E - 8	9. 0 - 3
2. E - 5	6. E - 9	10. 0 - 4
3. E - 6	7. 0 - 1	11. 0 - 5
4. E - 7	8. 0 - 2	12. 0 - 6

---

34. Circle your current duty position. (Circle one)

1. 91B20 NCO Trainer
2. 91B30 NCO Trainer
3. Platoon Sergeant
4. Platoon Leader
5. Physician Assistant
6. Nurse
7. Other ______________________________(write-in)

35. How many 91B10 medics do you directly supervise/train now? (Circle one number)

1. None
2. 2 or less
3. 3 - 4
4. 5 - 10
5. 11 - 30
6. More than 30

---

36. How many years of experience have you had as a 91B10 medic trainer and/or supervisor? (Circle one number)

1. 2 years or less
2. 3 to 5 years
3. 6 to 9 years
4. 10 years or more

---

37. To what type of unit are you assigned? (Circle one number)

1. TO&E unit..........**go to question 38 & continue**
2. Hospital or clinic...**go to question 39 & continue**

---

38. If you are in a TO&E unit, what type of unit (Circle one number then **go to question 41**)

1. Maneuver battalion/squadron
2. Combat support battalion/squadron
3. Forward support battalion/Main support battalion/Area support support medical battalion
4. Hospital: CSH/MASH/GENERAL
5. Evacuation unit, ground/air
6. Other ________________________________(write-in)

39. If hospital or clinic, what type of facility? (Circle one number)

1. Medical center (MEDCEN)
2. Medical Activity (MEDDAC)
3. Health Clinic or Troop Medical Clinic
4. Other ______________________________ (write-in)

---

40. If hospital or clinic, what type of unit? (Circle one number)

1. Emergency department
2. Ambulance section
3. Patient in-processing/triage
4. Sick call clinic
5. Inpatient unit
6. Other ______________________________ (write-in)

---

41. During your entire military career, how long have you worked in TO&E units? (Circle one number)

1. Less than 1 year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

42. During your career as a medic, how long have you worked in TO&E units? (Circle one number)

1. Less than 1 year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

43. During your career, how long have you worked in a hospital or clinic? (Circle one number)

1. Less than 1 year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

44. During your career, how long have you worked in an emergency department (ED)? (Circle one number)

1. Less than 1 year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

45. Are you currently EMT-B certified? (Circle one number)

1. Yes...**go to question 46 & continue**
2. No....**go to question 48 & continue**

---

46. Where were you certified? (Circle one number)

1. 232nd MED BN, Ft. Sam Houston, TX
2. Current unit
3. Other ____________________________ (write-in)

---

47. How long have you been EMT-B certified? (Circle one number)

1. 2 years or less
2. 3 to 5 years
3. 6 to 9 years
4. 10 years or more

---

48. Have you been EMT certified before but had your certification expire? (Circle one number)

1. Yes...**go to question 49 and continue**
2. No....**go to question 50 and continue**

---

49. Circle below reasons your EMT certification may have expired. (Circle all that apply)

1. Continuing education classes appropriate for re-certification have not been available at the installation.

2. Time to attend continuing education classes appropriate for re-certification during duty hours has not been available.

3. Leadership does not show interest or support in keeping EMT certification current.

4. EMT certification and performance of my job are not related.

5. Certification is not tied to promotion or career progression.

Computer Systems. Please identify the types of computer systems available to 91B10 medics in your unit. This information will be used to understand the possibility of delivering distance learning training to the medic.

50. Please describe the types of computer systems available for you to use in your unit. Circle **Yes, No, or UK (don't know)** and fill in the **blanks** below.

Circle one letter for each category

	How many	LAN/Modem	Internet	CD-ROM
a. 386	____	Yes No UK	Yes No UK	Yes No UK
b. 486	____	Yes No UK	Yes No UK	Yes No UK
c. Pentium	____	Yes No UK	Yes No UK	Yes No UK

Written Comments or Concerns (optional)

Thank you for your time and participation!

APPENDIX G

Data Collection Station Set-Up

[Intentionally left blank]

Data Collection Skill Station Set-up

<u>Intravenous Therapy (IV) Station</u>

Equipment

1 – Manikin IV arm
1 – IV pole
1 – Table
1 – Trash container & bag
1 – Sharps container

Contents of Medic Bag (Number of items depend on number of soldier's tested per day)

2x2's
Clear dressing (i.e. Op site)
1" tape rolls
IV bags (50cc - smaller volume better, less waste & easy to pack)
IV tubing (macrodrip)
IV needles (20 gauge) 1" long
Tourniquet
Chucks
Non-sterile gloves

<u>Airway Station</u>

Equipment

1 – Intubation head
1 - Table
2 – Oxygen tanks, wrenches, regulators
1 – Trash container & bag

Contents of Medic Bag (Number of items depend on number of soldier's tested per day)

1 – Set of oral airways
1 – Set of nasal airways
1 – V-Vac hand held suction
1 – Package of suction catheters
1 – Non-rebreather mask with tubing
1 – Nasal cannula with tubing
1 – Oxygen face mask with tubing
1 – BVM
Petroleum jelly for airways
Non-sterile gloves

Bleeding Control/Shock Management Station

Equipment

1 – Trauma manikin
1 – Table
1 – Trash container & bag

Contents of Medic Bag (Number of items depend on number of soldier's tested per day)

4x4's
Kerlex
Abdominal dressings
Cavats
Field dressings
Limb tourniquet
Penlight
Tape
Scissors

Trauma Assessment Station

Equipment

1 – Trauma manikin
1 – Trash container & bag

Contents of Medic Bag (Number of items depend on number of soldier's tested per day)

1 – Penlight
1 – Stethoscope
1 – Blood Pressure Cuff
Assortment of sizes of cervical collars
Dressings the same as for bleeding control/shock management

APPENDIX H

Life-Saving Skill Scenarios

[Intentionally left blank]

Patient Assessment/Management - Trauma

Combat Medic:

You are called to the scene of a motor vehicle crash where you find a victim who was thrown from the car. The victim is found lying in a field 30 feet from the upright car.

The victim is unconscious, breathing, and has a pulse. The victim is moaning and appears banged up. Ask the examiner about the vital signs.

You must conduct your assessment as you would in the field including communicating with your patient. You may remove victim's clothing if you feel it is necessary. As you conduct your assessment, you should state everything you are assessing, finding, and treating.

You have 10 minutes to perform this assessment. Do you have any questions?

Oxygen Administration, Manual Airway, Upper Airway Adjuncts, Suctioning, and Ventilation Skills (non-rebreather mask, nasal prongs & bag-valve mask)

Combat Medic:

You encounter a victim that has been thrown out of a hummer. The victim is unconscious and is experiencing respiratory difficulties. The scene is safe.

The examiner will advise you to the victims needs. Do you have any questions?

You have 10 minutes for this station. Perform the needed activities to assist the victim's respiratory status. Verbalize your actions and findings.

Bleeding Control/Shock Management Scenario

Combat Medic:

You are responding to an accident and find a 25 year old male victim. Upon examination you find impaled object wound of the right leg which hit the femoral artery. This wound is an **arterial bleed with bright red blood spurting** from the wound. You need to **stop the bleeding and manage the shock.**

The scene is safe, with no bystanders and you are alone. You have you aid bag, oxygen, and a cellular phone to use.

The patient is unconscious. Your trauma assessment shows his airway is open and he is breathing 9 respirations a minute, blood pressure 80/40, pulse is 126, & his skin is pale, cold, and clammy. You have already started an IV but the patient has very low blood pressure and a rapid pulse.

You have 10 minutes to take action for the victim. Please perform and verbalize your actions.

Do you have any questions?

Intravenous (IV) Therapy

Combat Medic:

You are called to the scene of a motor vehicle crash and your victim has lost a lot of blood. You are going to start and IV and administer IV fluids to the victim.

You need to verbalize your actions and findings. You have 10 minutes to perform this skill. Do you have any questions?

APPENDIX I

Department of Transportation (DOT) EMT-B Curriculum

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The entire curriculum is surrounded by continuing education, which is designed to reflect two primary goals. First, during the instruction of the EMT-Basic: National Standard Curriculum, additional continuing education in related content may be provided. Secondly, continuing education is an integral component of any educational process and the EMT-Basic should be committed to life-long learning.

EMT-BASIC: NATIONAL STANDARD CURRICULUM
DIAGRAM OF EDUCATIONAL MODEL

CPR
Prerequisite

CONTINUING EDUCATION | **PREPARATORY** | CONTINUING EDUCATION

Introduction to Emergency Medical Care
The Well-Being of the EMT-Basic
Medical / Legal and Ethical Issues
The Human Body
Baseline Vitals and SAMPLE History
Lifting and Moving

AIRWAY

CONTINUING EDUCATION | Airway | CONTINUING EDUCATION

Advanced Airway (Elective)

MEDICAL	**PATIENT ASSESSMENT**	**TRAUMA**
General Pharmacology Respiratory Emergencies Cardiovascular Emergencies Diabetic Emergencies Allergic Reactions Poisoning/Overdose Emergencies Environmental Emergencies Behavioral Emergencies Obstetrics	Scene Size-up Initial Assessment Focused History and Physical Exam: Medical Focused History and Physical Exam: Trauma Detailed Physical Exam On-Going Assessment Communications Documentation	Bleeding and Shock Soft Tissue Injuries Musculoskeletal Care Injuries to the Head and Spine

CONTINUING EDUCATION | **INFANTS & CHILDREN** | CONTINUING EDUCATION

Infants and Children

CONTINUING EDUCATION | **OPERATIONS** | CONTINUING EDUCATION

Ambulance Operations
Gaining Access
Overviews

CONTINUING EDUCATION | CONTINUING EDUCATION | CONTINUING EDUCATION

The following pages show the breakdown of hours and objectives for the Emergency Medical Technician-Basic: National Standard Curriculum. In this design there are 46 lessons in the core curriculum. Three additional lessons are needed to complete the advanced airway elective, if offered.

The name of each lesson is followed by the recommended time needed to complete the instruction. The cognitive, effective, psychomotor objectives and the total number of objectives for that lesson are provided. The percentage of cognitive and percentage of hours is based on the entire core curriculum. This information may prove to be beneficial in designing written and practical evaluation tools.

Course Design

MODULE 1 PREPARATORY

Lesson 1-1 **Introduction to Emergency Medical Care**
Familiarizes the EMT-Basic candidate with the introductory aspects of emergency medical care. Topics covered include the Emergency Medical Services system, roles and responsibilities of the EMT-Basic, quality improvement, and medical direction.

Lesson 1-2 **Well-Being of the EMT-Basic**
Covers the emotional aspects of emergency care, stress management, introduction to Critical Incident Stress Debriefing (CISD), scene safety, body substance isolation (BSI), personal protection equipment (PPE), and safety precautions that can be taken prior to performing the role of an EMT-Basic.

Lesson 1-3 **Medical/Legal and Ethical Issues**
Explores the scope of practice, ethical responsibilities, advance directives, consent, refusals, abandonment, negligence, duty to act, confidentiality, and special situations such as organ donors and crime scenes. Medical/legal and ethical issues are vital elements of the EMT-Basic's daily life.

Lesson 1-4 **The Human Body**

Enhances the EMT-Basic's knowledge of the human body. A brief overview of body systems, anatomy, physiology and topographic anatomy will be given in this session.

Lesson 1-5 **Baseline Vital Signs and SAMPLE History**
Teaches assessing and recording of a patient's vital signs and a SAMPLE history.

Lesson 1-6 **Lifting and Moving Patients**
Provides students with knowledge of body mechanics, lifting and carrying techniques, principles of moving patients, and an overview of equipment. Practical skills of lifting and moving will also be developed during this lesson.

Lesson 1-7 **Evaluation: Preparatory Module**
Conduct a written and skills evaluation to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction.

MODULE 2 AIRWAY

Lesson 2-1 **Airway**
Teaches airway anatomy and physiology, how to maintain an open airway, pulmonary resuscitation, variations for infants and children and patients with laryngectomies. The use of airways, suction equipment, oxygen equipment and delivery systems, and resuscitation devices will be discussed in this lesson.

Lesson 2-2 **Practical Skills Lab: Airway**
Provides supervised practice for students to develop the psychomotor skills of airway care. The use of airways, suction equipment, oxygen equipment and delivery systems, and resuscitation devices will be included in this lesson.

Lesson 2-3 **Evaluation: Airway Module**
Conduct a written and skills evaluation to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction.

MODULE 3 PATIENT ASSESSMENT

Lesson 3-1 **Scene Size-Up**
Enhance the EMT-Basic's ability to evaluate a scene for potential hazards, determine by the number of patients if additional help is necessary, and evaluate mechanism of injury or nature of illness. This lesson draws on the knowledge of Lesson 1-2.

Lesson 3-2 **Initial Assessment**
Provides the knowledge and skills to properly perform the initial assessment. In this session, the student will learn about forming a general impression, determining responsiveness, assessment of the airway, breathing and circulation. Students will also discuss how to determine priorities of patient care.

Lesson 3-3 **Focused History and Physical Exam - Trauma Patients**
Describes and demonstrates the method of assessing patients' traumatic injuries. A rapid approach to the trauma patient will be the focus of this lesson.

Lesson 3-4 **Focused History and Physical Exam - Medical Patients**
Describes and demonstrates the method of assessing patients with medical complaints or signs and symptoms. This lesson will also serve as an introduction to the care of the medical patient.

Lesson 3-5 **Detailed Physical Exam**
Teaches the knowledge and skills required to continue the assessment and treatment of the patient.

Lesson 3-6 **On-Going Assessment**
Stresses the importance of trending, recording changes in the patient's condition, and reassessment of interventions to assure appropriate care.

Lesson 3-7 **Communications**
Discusses the components of a communication system, radio communications, communication with medical direction, verbal communication, interpersonal communication, and quality improvement.

Lesson 3-8 **Documentation**
Assists the EMT-Basic in understanding the components of the written report, special considerations regarding patient refusal, the legal implications of the report, and special reporting situations. Reports are an important aspect of prehospital care. This skill will be integrated into all student practices.

Lesson 3-9 **Practical Skills Lab: Patient Assessment**
Integrates the knowledge and skills learned thus far to assure that the student has the knowledge and skills of assessment necessary to continue with the management of patients with medical complaints and traumatic injuries.

Lesson 3-10 **Evaluation: Patient Assessment Module**
Conduct written and skills evaluation to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction.

MODULE 4 MEDICAL/BEHAVIORAL EMERGENCIES AND OBSTETRICS/GYNECOLOGY

Lesson 4-1 **General Pharmacology**
Provides the student with a basic knowledge of pharmacology, providing a foundation for the administration of medications given by the EMT-Basic and those used to assist a patient with self-administration.

Lesson 4-2 **Respiratory Emergencies**
Reviews components of the lesson on respiratory anatomy and physiology. It will also provide instruction on assessment of respiratory difficulty and emergency medical care of respiratory problems, and the administration of prescribed inhalers.

Lesson 4-3 **Cardiovascular Emergencies**
Reviews of the cardiovascular system, an introduction to the signs and symptoms of cardiovascular disease, administration of a patient's prescribed nitroglycerin, and use of the automated external defibrillator.

Lesson 4-4 **Diabetes/Altered Mental Status**
Reviews of the signs and symptoms of altered level of consciousness, the emergency medical care of a patient with signs and symptoms of altered mental status and a history of diabetes, and the administration of oral glucose.

Lesson 4-5 **Allergies**
Teaches the student to recognize the signs and symptoms of an allergic reaction, and to assist the patient with a prescribed epinephrine auto-injector.

Lesson 4-6 **Poisoning/Overdose**
Teaches the student to recognize the signs and symptoms of poisoning and overdose. Information on the administration of activated charcoal is also included in this section.

Lesson 4-7 **Environmental Emergencies**
Covers recognizing the signs and symptoms of heat and cold exposure, as well as the emergency medical care of these conditions. Information on aquatic emergencies and bites and stings will also be included in this lesson.

Lesson 4-8 **Behavioral Emergencies**
Develops the student's awareness of behavioral emergencies and the management of the disturbed patient. Restraining the combative patient will also be taught in this lesson.

Lesson 4-9 **Obstetrics/Gynecology**
Reviews the anatomical and physiological changes that occur during pregnancy, demonstrate normal and abnormal deliveries, summarize signs and symptoms of common gynecological emergencies, and neonatal resuscitation.

Lesson 4-10 **Practical Skills Lab: Medical/Behavioral Emergencies and Obstetrics/Gynecology**
Draws on the knowledge and skills learned thus far in this practical lab. Students will be given the opportunity to assess and treat a variety of patients with various medical complaints.

Lesson 4-11 **Evaluation: Medical/Behavioral Emergencies and Obstetrics/Gynecology**
Conducts a written and skills evaluation to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction.

MODULE 5 TRAUMA

Lesson 5-1 **Bleeding and Shock**
Reviews the cardiovascular system, describes the care of the patient with internal and external bleeding, signs and symptoms of shock (hypoperfusion), and the emergency medical care of shock (hypoperfusion).

Lesson 5-2 **Soft Tissue Injuries**
Continues with the information taught in Bleeding and Shock, discussing the anatomy of the skin and the management of soft tissue injuries and the management of burns. Techniques of dressing and bandaging wounds will also be taught in this lesson.

Lesson 5-3 **Musculoskeletal Care**
Reviews of the musculoskeletal system before recognition of signs and symptoms of a painful, swollen, deformed extremity and splinting are taught in this section.

Lesson 5-4 **Injuries to the Head and Spine**
Reviews the anatomy of the nervous system and the skeletal system. Injuries to the spine and head, including mechanism of injury, signs and symptoms of injury, and assessment. Emergency medical care, including the use of cervical immobilization devices and short and long back boards will also be discussed and demonstrated by the instructor and students. Other topics include helmet removal and infant and child considerations.

Lesson 5-5 **Practical Skills Lab: Trauma**
Provides practice of the assessment and management of patients with traumatic injuries.

Lesson 5-6 **Evaluation: Trauma Module**
Conducts a written and skills evaluation to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction.

MODULE 6 INFANTS AND CHILDREN

Lesson 6-1 **Infants and Children**
Presents information concerning the developmental and anatomical differences in infants and children, discuss common medical and trauma situations, and also covered are infants children dependent on special technology. Dealing with an ill or injured infant or child patient has always been a challenge for EMS providers.

Lesson 6-2 **Practical Skills Lab: Infants and Children**
Provides the EMT-Basic student with the opportunity to interact with infants and children, and to practice the knowledge and skills learned thus far concerning this special population.

Lesson 6-3 **Evaluation: Infants and Children**
Conduct a written and skills evaluation to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction.

MODULE 7 OPERATIONS

Lesson 7-1 **Ambulance Operations**
Presents an overview of the knowledge needed to function in the prehospital environment. Topics covered include responding to a call, emergency vehicle operations, transferring patients, and the phases of an ambulance call.

Lesson 7-2 **Gaining Access**
Provides the EMT-Basic student with an overview of rescue operations. Topics covered include roles and responsibilities at a crash scene, equipment, gaining access, and removing the patient.

Lesson 7-3 **Overviews**
Provides the EMT-Basic student with information on hazardous materials, incident management systems, mass casualty situations, and basic triage.

Lesson 7-4 **Evaluation: Operations**
Conduct a written and skills evaluation will be done to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction.

MODULE 8 ADVANCED AIRWAY (Elective)

The course coordinator should consult with state EMS office prior to establishing course outline to determine if this module of instruction may be included.

Lesson 8-1 **Advanced Airway**
Instructs students on how to maintain an airway by means of orotracheal intubation. Included is a review of basic airway skills, nasogastric tube insertion for decompression of the stomach of an infant or child patient, and orotracheal intubation of adults, infants and children. This lesson should be presented prior to the medical and trauma modules.

Lesson 8-2 **Practical Skills Lab: Advanced Airway**
Demonstrates the skills of advanced airway techniques for the EMT-Basic. This includes insertion of the nasogastric tube in infant and child patients and orotracheal intubation of adults, infants and children.

Lesson 8-3 **Evaluation: Advanced Airway**
Conduct a written and skills evaluation to determine the student's level of achievement of the cognitive, psychomotor and affective objectives from this module of instruction. Whenever possible, supervised clinical experience will be provided to the students.

APPENDIX J

Training Task Selection Board (TTSB) Skills

[Intentionally left blank]

TTSB Tasks and the Experimental POI

Task Rank	Task Title	Location in POI
7.00	Complete pre-hospital care report for patients with environmental emergencies	Brady Chapters 15 & 22
7.00	Apply pressure points to control external bleeding	Brady Chapter 25
7.00	Apply direct pressure to control external bleeding	Brady Chapter 25
7.00	Complete a pre-hospital report for a patient with obstetrical/gynecological emergencies	Brady Chapter 15 & 24
7.00	Provide basic emergency medical care for the mother with excessive bleeding	Brady Chapter 24 & 25
7.00	Assist with abnormal deliveries	Brady Chapter 24
7.00	Provide post delivery care of the mother	Brady Chapter 24
7.00	Assist in the delivery of the placenta	Brady Chapter 24
7.00	Provide post delivery care of the infant	Brady Chapter 24 & 29
7.00	Provide infant & neonatal resuscitation	Brady Chapters 24 & 29
7.00	Assist in a normal vaginal delivery	Brady Chapter 24
7.00	Provide basic emergency medical care for a patient experiencing a behavioral emergency	Brady Chapter 23
7.00	Restrain a patient with a behavioral problem	Brady Chapter 23
7.00	Assess a patient experiencing a behavioral emergency	Brady Chapter 11 & 23 Soldiers Manual
7.00	Apply a tourniquet to control external bleeding	Brady Chapter 25 Soldiers Manual of common tasks EFMB manual 91B Soldiers Manual

7:00	Provide basic emergency medical care for a near drowning patient	Brady Chapter 22
7.00	Provide basic emergency medical care for a patient with exposure to heat	Brady Chapter 22 Soldiers Manua of common tasks
7.00	Assess a patient with exposure to heat	Brady Chapters 11 & 22 Soldiers Manual of common tasks
7.00	Provide basic emergency medical care for a patient with exposure to cold	Brady Chapter 22 Soldiers Manual of common tasks
7.00	Assess a patient with exposure to cold	Brady Chapters 11 & 22 Soldiers Manual of common tasks
7.00	Complete a pre-hospital care report for patient with an overdose/poisoning emergency	Brady Chapters 15 & 21
7.00	Document patient's response to activated charcoal	Brady Chapters 16 & 21
7.00	Administer activated charcoal to poisoning patient	Brady Chapters 16 & 21
7.00	Provide basic emergency medical care for a patient with suspected poisoning	Brady Chapter 21
7.00	Provide basic emergency medical care for a patient with suspected overdose	Brady Chapter 21
7.00	Complete a pre-hospital report for a patient with an allergic emergency	Brady Chapters 11 & 20
7.00	Provide basic emergency medical care for closed soft tissue injury	Brady Chapter 26 Soldier's Manual of common tasks
7.00	Document patient's response to epinephrine injection	Brady Chapters 15, 16 & 20
7.00	Apply a pressure dressing to control external bleeding	Brady Chapter 25 - lab

7.00	Assess a patient's response to epinephrine injection	Brady Chapters 11, 16 & 20
7.00	Provide basic emergency medical care for a patient with painful, swollen, deformed extremity	Brady Chapters 26 & 27
7.00	Triage patients	Brady Chapter 31
7.00	Assess a child/infant	Brady Chapter 29
7.00	Remove a helmet from a patient	Brady Chapter 28 Immobilization lab
7.00	Perform stabilization of a helmet	Brady Chapter 28 Immobilization lab
7.00	Perform rapid extrication	Brady Chapter 28 Immobilization lab
7.00	Secure a patient to a long spine board	Brady Chapter 28 Immobilization lab
7:00	Perform a two-person log roll for a patient with a spinal injury	Brady Chapters 5 & 28 Lifting/moving Immobilization lab
7.00	Perform cervical spine stabilization	Brady Chapter 28
7.0	Assess a responsive patient with a Suspected spinal cord injury	Brady Chapter 10 & 28
7.00	Open the airway in a patient with a suspected spinal cord injury	Brady Chapters 6,28 & BCLS
7.00	Complete pre-hospital care report for patients with musculoskeletal injuries	Brady Chapters 15 & 27
7.00	Complete a triage tag	Brady Chapter 15
7.00	Complete a pre-hospital care report for patients with soft tissue injuries	Brady Chapters 15 & 26
7.00	Provide basic emergency medical care for chemical burns	Brady Chapters 26& 32
7.00	Provide basic emergency medical care for full thickness burns (third degree)	Brady Chapter 26

7.00	Provide basic emergency medical care for partial thickness burns (second degree)	Brady Chapter 26
7.00	Provide basic emergency medical care for superficial burns (1st degree)	Brady Chapter 26
7.00	Provide care for an amputated part	Brady Chapter 26
7.00	Provide basic emergency care for amputations	Brady Chapter 26
7.00	Provide basic emergency medical care for impaled objects	Brady Chapter 26
7.00	Provide basic emergency medical care for open abdominal wounds	Brady Chapter 26 Soldiers Manual of common tasks Bleeding Control Lab
7.00	Provide basic emergency medical care for open chest injuries	Brady Chapter 26 Soldiers Manual of common tasks Bleeding Control Lab
7.00	Provide basic emergency medical care for open soft tissue injuries	Brady Chapter 26 Soldiers Manual of common tasks
7.00	Complete a pre-hospital care report for patients with bleeding and/or shock (hypoperfusion)	Brady Chapters 15 & 25
7.00	Provide basic emergency medical care for patients in shock (hypoperfusion)	Brady Chapter 25 Lab
7.00	Provide basic emergency medical care for patients with internal bleeding	Brady Chapter 25
7.00	Administer epinephrine auto injector to self/patient	Brady Chapter 16 & 20 General Pharmacology Lab Clinical rotation
7.00	Identify a hazardous material situation	Brady Chapter 32
7.00	Assemble a bag valve mask unit	Brady Chapter 6 Airway Lab

7.00	Administer oxygen to an infant or child	Brady Chapters 6 & 29 BCCS Airway Lab
7.00	Ventilate an infant or child using a barrier device	Brady Chapters 6 & 29 BCCS Airway Lab
7.00	Ventilate an infant or child using a bag valve mask	Brady Chapters 6 & 29 Airway Labs
7.00	Apply a nasal cannula	Brady Chapter 6 Airway Labs Clinical rotation 91B Soldier's manual
7.00	Apply a non-rebreather face mask	" " " "
7.00	Set up an oxygen tank	" " " "
7.00	Insert a nasopharyngeal airway	" " " "
7.00	Insert a oropharyngeal airway	" " " "
7.00	Ventilate a patient with a stoma	" " " "
7.00	Ventilate a patient with a flow restricted oxygen powered ventilation device	" " " "
7.00	Ventilate a patient with a bag value mask while using a jaw thrust	" " " "
7.00	Perform two rescuer ventilation using bag valve mask	" " " "
7.00	Perform one rescuer ventilation using bag valve mask	Brady Chapter 6, Clinical rotation 91B Soldier's manual Airway Labs
7.00	Perform a rapid trauma assessment based on mechanism of injury and/or mechanism of illness	Brady Chapters 7-13 Soldier's Manual of common tasks Skills Assessment
7.00	Ventilate a patient using a pocket mask	Brady Chapter 6, Airway Labs
7.00	Perform oropharygeal suctioning on a Adult, infant and child	Brady Chapter 6 Airway Labs

7.00	Perform Jaw Thrust	Brady Chapter 6 Airway Labs BCLS
7.00	Load and Unload Transport Device	Brady Chapters 5,30, & 31 Lifting & Moving Labs
7.00	Transfer and Position Patient on a Transport Device	" " " "
7.00	Prepare a patient transport device	" " " "
7.00	Palpate a blood pressure	Brady Chapter 9, 91B Soldier's Manual Assessment Labs
7.00	Auscultate a blood pressure	" " " "
7.00	Assess pupils	" " " "
7.00	Assess skin color, temperature, condition, and capillary refill in infants and children Manual	Brady Chapter 9 & 13 91B Soldier's Assessment Labs
7.00	Palpate and auscultate a pulse	Brady Chapter 9 91B Soldier's Manual Assessment Labs
7.00	Obtain rate, quality, and character of breathing	" " " "
7.00	Obtain consent to treat patient	Brady Chapter 3
7.00	Document Equipment Disinfection Cleaning	Brady Chapter 15 EFMB Manual 91B Soldier's Manual
7.00	Assess a responsive patient with no known medical or trauma history	Brady Chapters 8 & 9
7.00	Perform a detailed physical exam	Brady Chapters 7-13
7.00	Provide basic emergency medical care to a patient experiencing chest pain/ discomfort	Brady Chapter 18

7.00	Document patient's response to oral Brady glucose assess patient's response to oral glucose	Chapters 8-13, Brady Chapters 16-19
7.00	Administer oral glucose	Brady Chapters 16,19 Pharmacology Labs
7.00	Provide basic emergency medical care for a diabetic patient	Brady Chapter 19
7.00	Complete a pre-hospital report for patients with cardiac emergencies	Brady Chapters 15 & 18
7.00	Document patient response to nitroglycerin	Brady Chapters 15, 16 & 18
7.00	Perform preshift inspection of an automated external defibrillator	Brady Chapter 18 AED Lab Clinical rotation
7.00	Assess patients response to an automated external defibrillator (AED)	Brady Chapters 8-13, 18 AED Lab
7.00	Perform maintenance for an automated external defibrillator (AED)	Brady Chapter 18 AED Lab
7.00	Operate an automated external defibrillator (AED)	Brady Chapter 18 AED Lab
7.00	Apply an automated external defibrillator (AED) to a patient	
7.00	Complete a prehospital care report for a patient with head and spinal injuries	Brady Chapter 28
7.00	Assess a patient experiencing chest pain or discomfort	Brady Chapters 8-13, 18
7.00	Administer an inhaler	Brady Chapters 16 & 17 Pharmacology Lab
7:00	Perform basic emergency medical care for breathing difficulty	Brady Chapter 17
7.00	Inspect medications	Brady Chapter 16
7.00	Assist patient with self administration of medications	Brady Chapter 16

7.00	Perform a prehospital care report	Brady Chapter 15
7.00	Perform a patient care report to an advanced life support provider	Brady Chapter 14 & 15
7:00	Perform a radio transmission, reporting a patient status to staff at a receiving facility Communications Lab	Brady Chapters 14, 30 EFMB Manual
7.00	Perform a focused history and physical exam	Brady Chapters 8-13 Assess Lab
7.00	Perform an initial patient assessment	Brady Chapter 8, Assess Lab
7.00	Perform and ongoing patient assessment	Brady Chapter 12 Assess Lab
7.00	Demonstrate proper disposal of equipment	Brady Chapters 2, 16
7.00	Assess a non-responsive patient	Brady Chapters 8, 13,19,28
7.00	Complete a prehospital care report for Patients with diabetic emergencies	Brady Chapters 15 & 19
7.00	Disinfect clean equipment	Brady Chapter 30 91B Soldier's Manuel
7.00	Assess a patient with altered mental status	Brady Chapters 19 & 28
7.00	Triage casualties on an integrated battlefield	Brady Chapter 31 EMFB Manual
7.00	Clear an upper airway obstruction using basic techniques on an adult, BTLS	Brady Chapter 6 Airway Labs child & infant CPR Labs Soldier Manual of common tasks 91B Soldier's manual
7.00	Perform one rescuer CPR on adult, infant and child	" " " "
7.00	Perform rescue breathing on an adult, infant and child	" " " "
7.00	Position patient to keep airway clear	" " " "

7.00	Perform two rescuer CPR on an adult and child	" " " "
6.73	Interpret vital signs	Brady Chapter 9
6.64	Triage casualties in the tactical environment	Brady Chapters 30-32 EFMB Manual
6.64	Initiate an IV for an adult patient	Brady Appendix A 91B Soldier's Manual
6.64	Treat patient with a perforating or Penetrating wound	Brady Chapter 26 EFMB Manual Soldier's Manual of common tasks 91B Manual Bleeding Control Lab
6.64	Control extremity hemorrhage	Brady Chapters 25-27 Bleeding Control Lab EFMB Manual Soldier's Manual-Common Tasks,91B Soldier's Manual
6.55	Perform Needle Chest Decompression	Brady Chapter 33
6.55	Perform Needle Cricothyriodotomy	91B30 Soldiers manual
6.45	Perform Endotrachael Intubation	Advanced airway lab
6.55	Identify Tension Pneumothorax	Brady Chapter 26
6.55	Manage suspected spinal injuries	Brady Chapter 28 Immobilization lab
6.55	Provide basic emergency care for a suspected hemothorax	Brady Chapter 26
6.45	Apply a pneumatic splint to a suspected fractured extremity	Brady Chapter 27 Traction/Splinting lab
6.45	Transport a casualty with a suspected spinal injury	Brady Chapter 5 & 28
6.45	Perform AVPU (alert, verbal, painful, unconscious assessment)	Brady Chapter 10, 11, & 28

6.45	Establish access with a saline lock	Brady Appendix A
6.45	Identify when not to place an airway	Brady Chapter 6
6.45	Determine a patient's level of consciousness using the Glascow coma scale	Brady Chapter 28
6.42	Perform medical combat lane training FTX	
6.36	Position a patient	Brady Chapter 5
6.36	Make an entry in a medical record Subjective, objective, assessment plan format (SOAP)	Clinical rotation Documentation Brady Chapter 15
6.36	Administer selected emergency medications	Brady Chapter 16 Pharmacology lab 91B Soldier's manual
6.36	Apply improvised splints to a fracture of the leg	Brady Chapter 27 EFMB Manual 91B10 Soldier's Manual Soldier's Manual of common tasks
6.36	Apply an occlusive dressing	Brady Chapter 25 Bleeding Control labs EFMB Manual 91B Soldier's Manual
6.36	Provide basic emergency care for a pneumothorax	Brady Chapter 26
6.36	Provide basic emergency care for a tension pneumothorax	Brady Chapter 26
6.36	Treat a casualty for a heat injury	Brady Chapter 22 Soldier's Manual of common tasks EFMB Manual
6.35	Establish a Casualty Collection Point	EFMB Manual
6.35	Determine total body surface area burned using the "Rule of nines"	Brady Chapter 26
6.27	Administer intramuscular injections	Brady Chapter 16

		Pharmacology lab Clinical rotation
6.35	Manage a suspected fracture or dislocated (angulated) knee	Brady Chapter 27 Traction/Splinting lab
6.27	Manage anaphylactic shock	Brady Chapter 20
6.27	Set up oxygen equipment	Brady Chapter 6 Airway lab
6.27	Manage a patient with dehydration	Brady chapter 19, 22, and 25
6.27	Identify Evacuation status of head Injury patients through AVPU assessment	Brady Chapter 28 and 30 Soldier's Manual of common tasks EFMB Manual Evacuation lab
6.27	Provide basic emergency medical care for a patient with an open head injury	Brady Chapter 28
6.18	Administer subcutaneous injections	Brady Chapter 16
6.18	Identify medical terminology and abbreviations	All chapters of Brady correspondence course
6.18	Identify when not to administer pain medications	Chapter 28 91B Soldier's manual
6.18	Identify intra-abdominal injuries	Brady Chapter 26 91B Soldier's manual
6.18	Treat an avulsed eye injury	Brady Chapter 26 91B Soldier's manual
4.50	Triage casualties on a conventional battlefield	Brady Chapter 30, 31, and 32 EFMB Manual 91B Soldier's manual Evacuation lab
6.18	Manage a mangled extremity	Brady Chapter 26 and 27
6.18	Perform basic management of missile wounds	Brady Chapter 25, 26 and 27

6.18	Initiate/update Field Medical Card (DD Form 1380)	Brady Chapter 15 EFMB Manual 91B Soldier's manual Field Medical Card lab
6.18	Manage a lower leg fracture	Brady Chapter 27 Traction/Splinting lab 91B Soldier's manual
6.18	Apply Hare Traction Splint to a suspected fractured femur	Traction/Splinting lab Brady chapter 27 91B Soldier's manual
6.18	Provide basic emergency care for an allergic reaction	Brady Chapter 16 and 20
6.16	Instruct soldiers in individual preventive medicine measures	91B Soldier's manual
6.09	Manage patients during seizures and/or convulsions	Brady Chapter 30, 31 and 32 91B Soldier's manual
6.09	Prepare casualties for evacuation	Brady Chapter 30, 31 and 32 91B Soldier's manual EFMB Manual
6.09	Identify the need for stable/unstable patient evacuation	Brady Chapter 30, 31 and 32 EFMB Manual 91B Soldier's manual
6.09	Perform basic management of choking agent casualties	Brady Chapter 6 and 32 EFMB Manual 91B Soldier's manual
6.09	Load and unload casualties from an ambulance	Brady Chapter 5, 30, 31 and 32 EFMB Manual 91B Soldier's manual FTX Clinical Rotation
6.09	Transmit a nine line medical evacuation request	Brady Chapter 14 Soldier's Manual of common tasks
6.09	Apply arm slings	Brady Chapter 27 Traction/Splinting lab

6.09	Perform basic treatment of closed chest wound casualties	Brady chapter 26 91B Soldier's manual
6.09	Assign casualty evacuation priorities	Brady Chapter 30 Soldier's Manual of common tasks EFMB Manual Evacuation lab
6.09	Manage a suspected dislocated fractured hip	Brady chapter 5 and 27 Traction/Splinting lab
6.09	Provide treatment to NBC casualties in the field	Brady Chapter 32 EFMB Manual 91B Soldier's manual Soldier's Manual of common tasks NBC lab
6.09	Provide on-going care to patients in the event of evacuation delays	EFMB Manual 91B Soldier's manual
6.09	Initiate preventive medicine measures prevent heat or cold injuries	Brady Chapter 22 EFMB Manual 91B Soldier's manual
6.09	Provide basic emergency medical care for a patient with a closed head injury	Brady Chapter 28
6.09	Identify a flail chest	Brady Chapter 26
6.09	Provide basic emergency care for a patient with a laceration	Brady Chapter 26
6.00	Assemble a needle and syringe	Brady Chapter 26 Pharmacology lab
6.00	Identify blast injury and accompanying complications	Brady Chapter 25, 26, 27 and 28
6.00	Perform basic management of blood agent (hydrogen cyanide) casualties	Brady Chapter 32 EFMB Manual 91B Soldier's manual
6.00	Perform basic emergency treatment of a snake bite	Brady Chapter 20 and 21 EFMB Manual

6.00	Provide basic emergency treatment of inhalation injuries	Brady Chapter 6, 17 and 26
6.00	Manage casualty evacuation methods	Brady Chapter 30 and 31 EFMB Manual 91B Soldier's manual
6.00	Perform basic treatment of a patient with a respiratory disease	Brady Chapter 6 and 17
6.00	Provide basic field sanitation/ preventive medicine	EFMB Manual 91B Soldier's manual
6.00	Perform basic management of abdominal trauma	Brady Chapter 26 and 30 EFMB Manual 91B Soldier's manual Evacuation lab
6.00	Route a casualty through a Battalion Aid Station	EFMB manual
6.00	Provide basic emergency care for a simple rib fracture	Brady Chapter 27
6.00	Provide basic emergency care for a flail chest	Brady Chapter 26
6.00	Manage a suspected dislocated and/or fractured ankle	Brady Chapter 27 Traction/Splinting lab
6.00	Immobilize a suspected fracture of the arm	Brady Chapter 27 Traction/Splinting lab
6.00	Immobilize a suspected fracture of the leg (femur)	Brady Chapter 27 Traction/Splinting lab 91B Soldier's manual
6.00	Stock an Aid bag	
6.00	Apply a sterile dressing	Brady Chapter 25
6.00	Install computer software	IMO handout Information lab
6.00	Treat chemical burns	Brady Chapter 26 EFMB Manual 91B Soldier's manual

5.91	Perform advanced management of a Blister agent casualty	Brady Chapter 26 EFMB Manual 91B Soldier's manual
5.91	Prepare patient for medical evacuation (MEDEVAC), (CASEVAC)	Brady Chapter 15 91B Soldier's manual EFMB Manual
5.91	Treat chemical burns of the eye	Brady Chapter 26
5.91	Perform basic management of a Nerve agent casualty	EFMB Manual 91B Soldier's manual of common tasks
5.91	Manage a fracture in a remote environment	Brady Chapter 27 91B Soldier's manual EFMB Manual
5.91	Perform basic emergency treatment of closed abdominal injuries	Brady Chapter 26
5.91	Perform neurological examination on a patient with suspected central nervous system injuries	Brady Chapter 8, 9,10, 12, 13 and 28
5.91	Perform basic emergency care for traumatic asphyxia	Brady Chapter 6, 17, 21 26 and 27
5.91	Obtain blood specimen using a vacutainer	Brady Appendix A Clinical rotation IV lab 91B Soldier's manual
5.91	Administer intradermal injections	Brady Chapter 16 91B Soldier's manual Pharmacology lab
5.91	Provide basic emergency treatment for an acute abdomen	Brady Chapter 26 91B Soldier's manual
5.91	Manage a patient with and intravenous infusion	Brady Appendix A IV lab Clinical rotation 91B Soldier's manual
5.91	Provide basic emergency care for a pericardial tamponade	Brady Chapter 18
5.91	Request medical (MEDEVAC), casualty (CASEVAC) evacuation	EFMB Manual 91B Soldier's manual

5.91	Identify when not to start an intravenous infusion (IV)	Brady Appendix A 91B Soldier's manual
5.91	Decontaminate a casualty	Brady chapter 32 EFMB Manual 91B Soldier's manual Soldier's Manual of common tasks NBC lab
5.91	Demonstrate medical communication skills	Brady Chapter 14 and 15 Clinical rotation All didactic periods and labs
5.91	Treat a casualty for a cold injury	Brady Chapter 22 EFMB Manual 91B Soldier's manual Soldier's Manual of common Tasks
5.91	Initiate basic treatment for neck injuries	Brady Chapter 5 and 28 Immobilization lab
5.91	Provide basic emergency care for a patient with a complete avulsion	Brady Chapter 26 91B Soldier's manual
5.91	Immobilize a suspected dislocated shoulder	Brady Chapter 27 Traction/Splinting lab
5.91	Apply a dressing to a wound of the head and face	Brady Chapter 26 91B Soldier's manual
5.91	Perform basic treatment for immersion foot syndrome	Brady Chapter 26 91B Soldier's manual
5.82	Perform rapid assessment management (RAM) using noise and light discipline in a tactical environment	91B Soldier's manual EFMB Manual
5.82	Respond to adverse reactions to intravenous (IV) therapy	Brady Appendix A 91B Soldier's manual
5.82	Irrigate an open wound	91B Soldier's manual
5.82	Treat burns of the eye	Brady Chapter 26 91B Soldier's manual

5.82	Manage a dislocation in a remote environment	Brady Chapter 27 EFMB Manual 91B Soldier's manual Traction/Splinting lab
5.82	Manage Battle Fatigue casualty	Brady Chapter 23 EFMB Manual 91B Soldier's manual
5.82	Perform casualty vehicle Extrication	Brady Chapter 31 Vehicle Extrication lab
5.82	Put on sterile gloves	Brady Chapter 25 Assist with procedures lab 91B Soldier's manual Bleeding Control lab Clinical rotation
5.82	Perform basic physical assessment of the circulatory system	Brady Chapter 11 and 18 Assessment lab Clinical rotation
5.82	Apply cardiac monitor to patient	Brady Chapter 18
5.82	Treat lacerations and contusions of the eye	Brady Chapter 26
5.73	Treat electrical burns	Brady chapter 26 91B Soldier's manual
5.73	Administer oral medications	Brady Chapter 16 91B Soldier's manual
5.73	Package and evacuate a casualty using an improvised litter	EFMB Manual 91B Soldier's manual
5.73	Ventilate a contaminated casualty	Brady Chapter 6 and 32 91B Soldier's manual
5.73	Perform basic physical assessment of the digestive system	Brady Chapter 12

5.73	Perform a hasty deliberate decontamination	Brady Chapter 32 EFMB Manual 91B Soldier's manual Soldier's Manual of common tasks NBC lab
5.73	Treat foreign bodies of the eye	Brady Chapter 26 91B Soldier's manual
5.73	Perform basic physical assessment of the nervous system	Brady Chapter 10 and 11 Assessment lab
5.73	Perform basic emergency medical treatment on a casualty in a Battalion Aid Station	EFMB Manual 91B Soldier's manual FTX
5.73	Perform basic physical assessment of the respiratory system	Brady Chapter 6, 11, and 17 Assessment lab
5.64	Disinfect water for drinking	EFMB Manual 91B Soldier's manual Soldier's Manual of common tasks Preventive Medicine lab
5.64	Perform wound closure using non-suture technique	91B10 Soldier's manual
5.64	Perform basic principles of medical asepsis	Brady Chapter 25 91B Soldier's manual
5.64	Perform patient extrication	Brady Chapter 31 EFMB Manual 91B Soldier's manual Vehicle Extrication lab
5.64	Route patient through a medical company clearing station	EFMB Manual 91B Soldier's manual
5.64	Locate casualties	EFMB Manual
5.64	Manage bystanders or buddy aid	EFMB Manual 91B Soldier's manual

5.64	Perform casualty air and ground evacuation training	Brady Chapter 30 EFMB Manual 91B Soldier's manual Evacuation lab
5.64	Provide basic emergency medical care for a patient with a partial avulsion	Brady Chapter 26
5.64	Manage a combi-tube	Brady Chapter 33 Advanced Airways lab
5.64	Insert a nasogastric tube	Brady Chapter 29 91B Soldier's manual Special procedures
5.64	Perform basic physical assessment of the integumentary system	Brady Chapter 8, 9, 10, 11, 12 and 26 Assessment lab
5.64	Perform foot and vehicle Land Navigation training	EFMB Manual 91B Soldier's manual Soldier's Manual of common tasks Class and lab on Land Navigation
5.64	Identify combat stress	Brady Chapter 23 EFMB Manual 91B Soldier's manual
5.60	Assess wound for infection	Brady Chapter 25 91B Soldier's manual Bleeding Control lab
5.55	Apply roller bandage	Brady Chapter 25 Bleeding Control lab
5.55	Perform Field Sanitation and hygiene training	EFMB Manual Preventive Medicine class FTX 91B Soldier's manual
5.55	Administer medicated steam/sprays/ aerosols	Brady Chapter 16 and 17 Pharmacology lab
5.55	Provide basic emergency care for patient having a stroke (CVA)	Brady Chapter 28

5.55	Treat poisoned victim in a remote location	Brady Chapter 22 EFMB manual 91B Soldier's manual
5.55	Change a sterile dressing	Brady chapter 25 Bleeding Control lab 91B Soldier's manual
5.55	Apply chemical warfare agent Protective Patient Wrap (PPW)	Brady Chapter 32 EFMB Manual 91B Soldier's manual NBC lab FTX
5.55	Adapt nonmedical vehicles for casualty evacuation	EFMB Manual 91B Soldier's manual FTX Evacuation lab
5.55	Discontinue IV therapy	Brady Appendix A 91B Soldier's manual IV lab
5.55	Provide basic emergency care for a myocardial contusion	Brady Chapter 18 and 26
5.55	Treat injuries of the genitalia	Brady chapter 26
5.55	Perform basic physical assessment of the musculoskeletal system	Brady Chapter 10 and 27
5.55	Enter the radio net, authenticate a Message and transmit a 9 line MEDEVAC request using an AN PRC 77	Brady Chapter 14 EFMB Manual 91B Soldier's manual Radio lab
5.55	Evaluate a newborn using the APGAR (appearance, grimace, pulse, activity, and respiratory scoring system)	Brady Chapter 24 91B Soldier's manual
5.50	Insert a Combi-tube	Brady Chapter 33 Advanced Airways lab
5.45	Perform basic principles of surgical asepsis	91B Soldier's manual Special Procedures lab
5.45	Treat a patient with contact dermatitis	91B Soldier's manual Sick Call class

5.45	Prepare a LZ/PZ	EFMB Manual 91B Soldier's manual
5.45	Apply basic principles of administration of medications	Brady Chapter 16 91B Soldier's manual
5.45	Assist with sick call procedures	91B Soldier's manual Sick call class and lab
5.45	Drive an ambulance in a tactical situation	FTX
5.45	Manage field dermatological conditions	91B Soldier's manual Sick call class and lab
5.45	Perform a patient care handwash	Brady Chapter 2 91B Soldier's manual
5.45	Identify when not to perform CPR on the battlefield	Brady BCLS CPR lab 91B Soldier's manual
5.36	Transport a casualty by litter	Brady Chapter 5 and 30 EFMB Manual 91B Soldier's manual
5.36	Treat a patient with a fracture of the nose	Brady Chapter 26
5.36	Select air evacuation-landing sites	Brady Chapter 30 EFMB Manual 91B Soldier's manual
5.36	Provide basic emergency medical treatment of athletic injuries	Brady Chapter 26, 27 and 28 Traction/Splinting lab Immobilization lab
5.36	Perform eye irrigation	Brady Chapter 16 and 26
5.36	Perform surgical handwash using field expedient method	Brady Chapter 2 EFMB Manual 91B Soldier's manual Handwashing lab
5.36	Apply basic principles of preparation of medications	Brady Chapter 16 Pharmacology lab 91B Soldier's manual

5.36	Guide and establish a helicopter to a landing point	EFMB Manual 91B Soldier's manual Evacuation class and lab FTX
5.36	Perform a pulse oximeter reading	Brady Chapter 6 and 17 Airway lab Clinical rotation
5.36	Treat a patient with skin abrasions	Brady Chapter 26
5.36	Provide care to an immobilized patient	Brady Chapter 25, 26, 27 and 28
5.27	Identify clinical syndrome secondary to Biological warfare exposure	Brady Chapter 32 EFMB manual 91B Soldier's manual NBC didactic and lab
5.27	Manage an intoxicated patient	Brady Chapter 23
5.27	Apply a local anesthetic agent	Brady Chapter 16 Pharmacology lab
5.27	Assemble and operate a single channel ground and airborne system (SINGAR)	Brady Chapter 13 EFMB Manual 91B Soldier's manual Communications lab
5.27	Transfer a patient through a Protective Collection Center	EFMB Manual 91B Soldier's manual Soldier's Manual of common tasks Military Field Operations lab
5.27	Perform survival techniques in an Enemy Prisoner of War (EPW) environment	Laws of Land Warfare class
5.27	Perform field sterilization procedures	91B Soldier's manual Special Procedures lab
5.27	Manage a violent patient	Brady Chapter 23
5.27	Perform basic management of a patient With acute hypertension	Brady Chapter 18

5.27	Don and remove gown/gloves/face mask	Brady Chapter 2 Universal precautions lab/class
5.27	Treat a casualty with direct energy weapon injury	Brady Chapter 26 Microwave/laser/burns class
5.27	Calculate IV flow rate	Brady Appendix A IV lab
5.27	Treat common toothache	91B Soldier's manual Sick Call procedures class
5.27	Initiate suicide precautions for a patient	Brady Chapter 23
5.18	Treat snow blindness	Brady Chapter 22
5.18	Measure a patient's temperature	Brady Chapter 9 Vital Signs lab
5.18	Evacuate Enemy Prisoners of War patients	EFMB Manual 91B soldier's manual Soldier's Manual of common tasks Laws of Land Warfare class
5.18	Perform basic management of radiation injuries	Brady Chapter 32 EFMB Manual 91B Soldier's manual Soldier's Manual of common tasks
5.18	Wear, store, maintain MOPP gear	Brady Chapter 32 EFMB Manual 91B Soldier's manual Soldier's Manual of common Tasks
5.18	Apply restraining devices to patients	Brady Chapter 5 and 23
5.18	Apply pneumatic anti-shock garment (PASG)	Brady Chapter 25 Bleeding Control lab 91B Soldier's manual
5.18	Perform basic emergency medical treatment on a casualty in a medical clearing company	91B Soldier's manual Military field Operations class

5.09	Deflate pneumatic anti-shock garment (PASG)	Brady Chapter Bleeding Control lab 91B Soldier's manual
5.00	Maintain pneumatic anti-shock garment (PASG)	Brady Chapter 5 and 23 Bleeding Control lab
5.10	Name common surgical instruments	Not taught
5.09	Treat patient with epistaxis (nosebleed)	Brady Chapter 26
5.09	Obtain throat culture	Sick Call class
5.09	Assist with sick call procedures using an algorithm	Sick call protocol Memorandum/Regulation Sick Call Class
5.09	Identify population events (Clustered illnesses)	91B Soldier's manual EFMB Manual Sick Call class
5.09	Perform basic physical assessment of the genitourinary system	Brady Chapter 11 and 26
5.09	Operate an AN PRC 77 and field telephone	EFMB Manual Brady Chapter 14 Communications lab
5.09	Prepare for nasogastric intubation	91B Soldier's manual Brady Chapter 29 Special Procedures lab/class
5.09	Assist a patient in donning and removing NBC clothes/mask	Brady Chapter 32 NBC lab
5.09	Insert a urinary catheter	91B Soldier's manual Special Procedures class
5.00	Perform basic emergency care for an animal bite	Brady Chapter 22
5.00	Perform an electrocardiograph (EKG)	Brady Chapter 18 AED lab
5.00	Treat patient with conjunctivitis under supervision	91B Soldier's manual Sick Call class

5.00	Apply astringent solution	Brady Chapter 16 Pharmacology lab
5.00	Apply elastic bandage	Brady Chapter 16 Pharmacology lab
5.00	Dispose of contaminated medical waste	91B Soldier's manual EFMB Manual Preventive Medicine class
5.00	Inspect water containers	91B Soldier's manual EFMB Manual Preventive Medicine class
5.00	Perform non-surgical treatment of inflammation of joints	Brady Chapter 27
5.00	Perform basic physical assessment of the sensory system	Brady Chapter 8, 9, 10, 11, 12, 13 and 28 Assessment lab
5.00	Remove a nasogastric tube	Brady Chapter 29 Special Procedures class/lab
5.00	Apply a cervical collar	Brady Chapter 28 Immobilization lab
5.00	Discuss where and how soldier might encounter telemedicine technology when deployed or in garrison	Technology class/lab
5.00	Create and send E-mail	Technology class/lab
5.00	Use web browser; connect to the Internet	Technology class/lab
5.00	Identify personnel within the organization to which you can go to for information management support	Technology class/lab
4.91	Prepare wound area for operative treatment	91B Soldier's Manual Special Procedures class/lab
4.91	Irrigate an obstructed ear	91B Soldier's manual Sick Call class
4.91	Perform algorithm directed troop Medical care	91B Soldier's manual Sick Call class

4.91	Treat hyperventilation syndrome	91B Soldier's manual Sick Call class
4.91	Apply heat therapy	91B Soldier's manual Sick Call class
4.91	Perform non-surgical treatment of inflammation of tendons	Brady chapter 27
4.82	Assess sputum characteristics	Brady Chapter 17 Assessment lab
4.82	Apply cold compress	Sick Call class/lab
4.82	Drive an ambulance in rescue/ Evacuation Transport/Evacuation class	EFMB Manual
4.82	Determine basic rodent/pest control requirements	Preventive Medicine class EFMB Manual 91B Soldier's Manual
4.82	Test blood for glucose	91B Soldier's manual Brady Chapter 19 Special Procedures lab
4.81	Treat multiple casualties in a tactical environment	EFMB Manual Military Field Operations class 91B Soldier's manual
4.75	Apply Reel splint	Brady Chapter 27 Traction/Splinting lab
4.73	Apply antiseptic solutions	Brady Chapter 16 Sick Call lab
4.73	Identify basic over-the-counter (OTC) medications	Brady Chapter 16 Sick Call lab
4.73	Prepare packs, sets, trays for sterilization	Not taught
4.73	Perform ear irrigation	Sick Call class/lab 91B Soldier's manual
4.73	Instill eye drops/ointments	Sick Call class/lab 91B Soldier's manual
4.73	Treat common headaches	Sick Call class/lab 91B Soldier's manual

4.73	Perform litter obstacle training	FTX EFMB Manual
4.73	Inspect food containers for abnormalties	Preventive Medicine class/lab EFMB Manual
4.73	Manage a patient with a nasogastric tube	91B Soldier's Manual Special Procedures lab
4.64	Obtain a wound culture specimen	91B Soldier's manual Special Procedures lab
4.64	Prepare a patient for minor surgical procedure	91B Soldier's manual Special Procedures lab
4.64	Decontaminate mercury thermometers	91B Soldier's manual Vital Signs lab
4.64	Conduct medical history interviews with outpatients	Brady Chapter 9
4.64	Instill eardrops	91B Soldier's manual Sick Call class/ lab
4.64	Perform cast care	91B Soldier's manual Sick Call class/ lab
4.64	Identify sexually transmitted diseases	91B Soldier's manual Sick Call class/ lab
4.64	Prepare patient for urinary catherization	91B Soldier's manual Sick Call class/ lab
4.64	Perform generator preventive maintenance checks and services	Soldier's Manual of common tasks
4.50	Assess for common gastrointestinal infectious diseases	Brady Chapter 11 91B Soldier's manual Assessment lab
4.50	Participate in familiarization training at a DEPMEDS site/training facility	FTX
4.50	Perform field sanitation functions	Preventive Medicine class/lab EFMB Manual 91B Soldier's manual

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APPENDIX K

MT2K Program of Instruction (POI)

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U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL

ACADEMY OF HEALTH SCIENCES

CENTER FOR HEALTHCARE EDUCATION AND STUDIES

AND

232D MEDICAL BATTALION

PLAN OF INSTRUCTION

300-91B10 (MT2K STUDY)

MEDICAL SPECIALIST COURSE

CURRENT AS OF 980918

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
1		Bn Cdr/CSM/CO/1SG/	
		TO/INST briefing	
		Blood borne Exposure Plan	
		ER/NG Orientation	
		POSH training	
		SAEDA/CID/IG briefing	
2		Inprocessing (CIS)	
		Sexually Transmitted	
		Diseases (Evans Theatre)	
		Fire Department	
		Orientation to Classroom	
		Admin./Course overview	
		Weigh-In/POV Inspection	
3		Intro to Emergency Med Care	0815-0915
		Well-Being of the EMT-B	0915-1015
		Medical/Legal Ethics	1015-1215
		LUNCH	1215-1315
		Infection Control/Universal Precautions	1315-1445
		Practical Lab: Body Substance Isolation Handwashing	1445-1700
4		The Human Body	0815-1115

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		Lifting and Moving Patients	1115-1215
		LUNCH	1215-1315
		Baseline Vitals Signs/ Sample History	1215-1415
		Practical Lab: Patient History & Vital Signs Lifting and Moving Patients	1415-1700
5		Cardiopulmonary Resuscitation	0815-1215
		LUNCH	1215-1315
		Practical Lab: Foreign Body Airway Obstruction CPR	1315-1700
6		The Mechanics of Breathing	0815-0915
	CIM2K410	Airway and Ventilation Pulse Oximeter	0915-1045
		Airway Adjuncts & Oxygen Equipment	1045-1215
		LUNCH	1215-1315
		Practical Lab: Airway Pulse oximeter Mechanical Aids to Breathing CPR Review	1315-1630
7		**CPR Examination**	0815-0915
		Scene size-up and Initial Assessment	0915-1015

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		Focused History & Physical: Trauma	1015-1145
		Focused History and Physical: Medical	1145-1215
		LUNCH	1215-1315
		Focused History & Physical: Medical	1315-1415
		Practical Lab: Patient Assessment **Review Lab: Airway Mechanical Aids to Breathing** **Review Lab: Handwashing; Patient History Vital Signs; Lifting & Moving Patients**	1415-1600
8		Advanced Airway	0815-0930
		Practical Lab: Advanced Airway	0930-1115
		Intravenous Therapy	1115-1215
		LUNCH	1215-1315
		Fire Safety	1315-1345
		Infection Control	1345-1445
	C1M2K100	Laws of Land Warfare	1445-1545
		Practical Lab: Intravenous Therapy	1545-1700

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		<u>Examination 1 (15% of grade)</u>	0815-1015
		Detailed Physical Exam	1015-1115
		LUNCH	1215-1315
		Review Labs: **Patient Assessment** **Airway** **Mechanical Aids to Breathing** **Intravenous Therapy**	1315-1700
10		Communications Intro to Mil Communications	0815-0845
		Documentation Intro to SOAP/Field Med Card	0845-0945
	C1M2K115	Pharmacology (Oral, Subq, Inhalant, IM, local anesthetics)	0945-1215
		LUNCH	1215-1315
		Practical Lab: **General Pharmacology** **(Oral, Subq, inhalant, IM, autoinjector)**	1315-1700
11		Respiratory Emergencies	0815-1045
	C1M2K420	Cardiovascular Emergencies and AED	1045-1215
		LUNCH	1215-1315
		Practical Lab: **Cardiac Arrest Management** **AED**	

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		Review Lab: General Pharmacology	1315-1600
		Environmental Emergencies	1015-1215
12		Diabetic Emergencies and Altered Mental Status	0815-1015
		LUNCH	1215-1315
		Review Lab: Patient Assessment Cardiac Arrest Management AED Basic Pharmacology Intravenous Therapy (IV)	1315-1700
13		Allergies	0815-1015
		Poisoning/Overdose	1015-1215
		LUNCH	1215-1315
		Lab skills Verification: Cardiac Arrest Management AED Basic Pharmacology	1315-1700
14		Behavioral Emergencies Combat Stress Control	0815-0945
		Obstetrics and Gynecological Emergencies	0945-1215
		LUNCH	1215-1315
		Lab Skills Verification: Cardiac Arrest Management AED Basic Pharmacology	1315-1700
15		**Examination 2 (15% of grade)**	0815-1015

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		LUNCH	1215-1315
		Mechanism of Injury Trauma patient	1015-1115
	C1M2K430	Bleeding and Shock Observe wound for infection, Wound irrigation and Wound closure using Non-suture technique	
		Practical Lab: **Pneumatic Anti-Shock** **Garment (PASG)** **Bleeding Control** **Shock Management**	1315-1700
16		Soft Tissue Injury	0815-1015
		Musculoskeletal Care	1015-1215
		LUNCH	1215-1315
		Injuries to the Head and Spine	1315-1500
		Practical Lab: **Immobilization Skills** **(Traction)** **Spinal Immobilization (Adult)**	1500-1600
17		Infants & Children -Development, Assessment, Abuse	0815-1015
		Infants & Children Emergencies	1015-1215

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		LUNCH	**1215-1315**
		Practical Lab: Immobilization skills (Traction)	
		Spinal Immobilization (Adult & Pediatric)	1315-1700
18		Ambulance Operations	0815-0915
	C1M2K300	Scene Techniques (Civilian & Military)	0915-1215
		LUNCH	1215-1315
		Lab skill Verification: Immobilization skills (Traction)	
		Spinal Immobilization (Adult & Pediatric)	1315-1700
19		Clinical (ER Rotation)	0900-1600
20	C1M2K120	Hazardous Materials	0815-1015
		Intro to Auto Extrication	1015-1215
		LUNCH	1215-1315
	C1M2K130	Gunshot/Shrapnel/Blast Injuries	1315-1515
	C1M2K140	Burns/Laser/Microwave Injuries	1515-1700
21		Auto extrication	0815-1215
		LUNCH	1215-1315
		Lab skill Verification: Immobilization skills	

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		(Traction)	
		Spinal Immobilization (Adult & Pediatric)	1315-1600
22		Examination 3 (15% of grade)	0815-1015
	C1M2K150	Putting it all together	1015-1215
		LUNCH	1215-1315
		Lab skills verification: Immobilization skills (Traction)	
		Spinal Immobilization (Adult & Pediatric)	1315-1700
23		NATIONAL REGISTRY CERTIFICATION EXAM	0815-1115
		Review of the NREMT	1115-1215
		LUNCH	1215-1315
		Lab skills verification: Immobilization skills (Traction)	
		Spinal Immobilization (Adult & Pediatric)	
		Handwashing	
		Vital Signs	
		Review Labs: Patient Assessment	
		Intravenous Therapy (IV)	

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
24		**Clinical (ER Rotation)**	0700-1500
25	C1M2K160	Preventive Medicine Disinfect drinking water Inspect water containers Basic Field Sanitation Dispose of contaminated medical waste Preventive health measures Pest and rodent control	0815-1115
		LUNCH	1215-1315
	C1M2K110	Patient Documentation Field Medical Card	1315-1415
		Lab: **Field Medical Card**	1415-1515
		Practical Lab: **Preventive Medicine** **Disinfect water for drinking** **Inspect water & food containers** **Dispose of contaminated medical waste**	1515-1700
26		Military Field Operations Route casualty through BAS & Medical clearing station Establish a casualty collection point (CCP) & Forward Support Medical Company (FSMC) Load/Unload various vehicles and aircraft	
	C1M2K330	Locate casualties	
	C1M2K340	Stock Aid Bag	0815-0915

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		Lab: **Communication: Use of radio**	0915-1000
		Evacuation and Transportation Select air evacuation-landing site Principles of establishing & guiding helicopter landing Load/unload various vehicles & aircraft Assign Air Evacuation Method Casualty Evacuation Methods POW Evacuation Driving an ambulance in tactical situations Adapting non-medical vehicle for casualty evacuation Prepare a casualty for MEDEVAC/CASEVAC Stock aid bag	1000-1100
		Lab: **Principles of establishing & guiding helicopter landing** **Load/unload various vehicles & aircraft** **Litter carries** **Casualty Evacuation methods** **Adapting non-medical vehicles for casualty evacuation** **Prepare a casualty for MEDEVAC/CASEVAC**	1100-1215
		LUNCH	1215-1315

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		Practical Lab: Communication (LZ/PZ; evacuation Triage (mass casualty)	1315-1700
27	C1M2K170 C1M2K180	Military NBC and Nomenclature	0815-1130
	C1M2K440	Generator Preventive maintenance checks and services	1130-1215
		LUNCH	1215-1315
	C1M2K190	**Perform casualty decontamination**	
		NBC Lab:	
	C1M2K200	**Transport casualty through a protective collection point**	
	C1M2K210	**Manage NBC casualty care in MOPP gear**	
	C1M2K220	**Apply chemical warfare agent protective patient wrap (PPW)**	1315-1700
28	C1M2K230	Handwashing- field expedient methods	0815-0915
	C1M2K240 C1M2K250	Aseptic techniques Create a sterile field	0915-1115

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
	C1M2K260	Assisting with Procedures	
		Common Procedures	
		Patient preparation	
		Safety issues	
		Minor surgery	
		Insert, remove and manage a patient with a nasogastric tube	
		Perform Urinary Catherization Male/Female	1115-1215
		Perform Venous Cut-down	
		Perform Thoracentesis	
		LUNCH	1215-1315
		Practical Lab:	
		Handwashing	
		Gloving/Sterile Field	
		Assisting with Procedures	1315-1500
		Review Lab:	
		Patient Assessment	
		Airway	
		Mechanical aids to breathing	
		Bleeding control	
		Shock management	
		Intravenous therapy (IV)	1500-1700
29		**Clinical (ER Rotation)**	0900-1600
30	C1M2K270	Sick Call procedures	
		Role of the medic	
		Evaluate common sick call complaints	
		Basics of sick call	
		Documentation (SOAP & FMC)	
	C1M2K280	Over the counter drugs	
	LPCBCB-FGE	Customer Relations	0815-1115
		EMT-B Review	1115-1215
		LUNCH	1215-1315
		Practical lab:	
		Monitor Blood Glucose	
		Apply Ace wraps	
		Apply cold compress	
		Fit for crutches & crutch walk	
		Moleskin application	
		Completing a SOAP & FMC	1315-1700

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
31		**NBC Lab: Wear, store, maintain MOPP gear Perform casualty decontamination Transport casualty through Protective collection point Apply chemical warfare agent protective patient (PPW)**	0815-1115
		EMT-B Review	1115-1215
		LUNCH	1215-1315
		Summon Cdr of the Relief Challenge & Password Lab	1315-1415
		Identify terrain features	1415-1600
32		EMT-B Review	0815-1215
		LUNCH	1215-1315
		Lab: Identify terrain features on a map	1315-1415
		Review Lab: Patient Assessment Airway Mechanical aids to breathing Bleeding control/Shock Management Intravenous Therapy (IV)	1415-1700
33		**Clinical (ER Rotation)**	0900-1600
34		**Military Medic/Soldier Test (20% of grade)**	0815-1015
		EMT-B Review	1015-1215
		LUNCH	1215-1315

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		Lab Exam: **Patient Assessment** **Airway** **Mechanical aids to breathing**	1315-1700
35		**Military Medic/Soldier retest or study hall**	0815-1015
		EMT-B review	1015-1215
		LUNCH	1215-1315
		Lab Exam: **Bleeding control/Shock management** **Intravenous Therapy (IV)**	1315-1600
36		**EMT-B Comprehensive final Exam (35% of grade)**	0815-1015
		Academic Summary	1015-1215
		LUNCH	1215-1315
		Lab exam: Patient Assessment Airway Mechanical aids to breathing Bleeding control/Shock management Intravenous Therapy (IV)	1315-1700
37		EMT-B Retest or FTX prep	0815-1215
		LUNCH	1215-1315
	C1M2K290	**Use of technology lab** **When and how combat medic encounters telemedicine** **Identify personnel within the organization who has information on information management support** **Steps to sending an electronic mail (E-mail) message**	

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
		Connecting to the internet; Using a web browser	1330-1530
38		Clinical (ER Rotation)	0900-1600
39		<u>COMMAND INSPECTION</u>	0815-1015
		<u>COMMANDER'S TIME</u>	1015-1215
		LUNCH	1215-1315
		Lab exam: Patient Assessment Airway Mechanical aids to breathing Bleeding control/Shock management	
		Intravenous Therapy (IV)	1315-1700
40		Lab exam (retest) Patient assessment Airway Mechanical aids to breathing Bleeding control/Shock management	
		Intravenous Therapy (IV)	0815-1215
		LUNCH	1215-1315
		Lab Exam (retest): Patient assessment Airway Mechanical aids to breathing Bleeding control/Shock management Intravenous therapy (IV)	1315-1550
41		Skills prep for FTX	0815-1215
		LUNCH	1215-1315
		Skills prep for FTX	1315-1600

MT2K POI TRAINING SCHEDULE

DAY	LP#	CLASS	TIME
42		Move to FTX site FTX FTX site clean up & return to company area	0815-UTC
43		Move to FTX site FTX FTX site clean up & return to company area	0815-UTC
44		Move to FTX site FTX FTX site clean up & return to company area	0815-UTC
45		Move to FTX site FTX FTX site clean up & return to company area	0815-UTC
46		Move to FTX site FTX FTX site clean up & return to company area	0815-UTC
47		Move to FTX site FTX FTX site clean up & return to company area	0815-UTC
48		Move to FTX site FTX FTX site clean up & return to company area	0815-UTC
49		CIS Turn-in Out-processing	0815-UTC

50	**Rehearsal Selected individuals** **Movement to Evans theatre** **Seating of class** **Graduation**	0815-1200

E COMPANY
CLASS 01-99
WEEK 2

232ND MEDICAL BATTALION
ARMY MEDICAL DEPARTMENT CENTER & SCHOOL
FORT SAM HOUSTON, TEXAS 78234

CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		MON 19 OCT			
0830-0920	________	D	**27CBCB-26/C**	(DEMONSTRATION) **CPR**	
0930-1250	________	PE	**27CBCB-26/C**	(PRACTICE EXERCISE) **CPR**	
1300-1350				**LUNCH**	
1330-1750	________	PE	**27CBCB-26/C**	(PRACTICE EXERCISE) **CPR**	
		TUE 20 OCT DAY 6			
0800-1250	________	PE	**27CBCB-26/C**	(PRACTICE EXERCISE) **CPR**	
1300-1350				**LUNCH**	
1400-1650	________	PE	**27CBCB-26/C**	(PRACTICE EXERCISE) **CPR**	
1700-1750	________	**LP**	**27CBCB-28/C**	REVIEW, **MODULE C**	
		WED 21 OCT DAY 7			
0830-0920	________	EX	**27CBCB-29/C**	WRITTEN EXAM **MODULE C**	
0930-1250	________	GPE	**27CBCB-30/C**	(PRACTICAL EXAM) **CPR**	
1300-1350				**LUNCH**	
1400-1750	________	GPE	**27CBCB-30/C**	(PRACTICAL EXAM) **CPR**	
				DINNER	
1900-2050	**LP**	**27CBCB-01/D**		**ORIENTATION (EMS SYSTEM, WELL-BEING OF THE EMT-B)**	
		THU 22 OCT DAY 8			
0800-0850	________	**LP**	**27CBCB-04/D**	**LEGAL ASPECTS OF THE EMT**	
0900-1050	________	**LP**	**27CBCB-EA/D**	**AIRWAY MANAGEMENT**	
1100-1150	________	**LP**	**27CBCB-EA/D**	(DEMONSTRATION) **AIRWAY MANAGEMENT**	
1200-1250	________	PE	**27CBCB-EA/D**	(PRACTICE EXERCISE) **AIRWAY MANAGEMENT**	
1300-1350				**LUNCH**	
1400-1750	________	PE	**27CBCB-EA/D**	(PRACTICE EXERCISE) **AIRWAY MANAGEMENT**	

E COMPANY
CLASS 01-99
WEEK 2

232ND MEDICAL BATTALION
ARMY MEDICAL DEPARTMENT CENTER & SCHOOL
FORT SAM HOUSTON, TEXAS 78234

CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		FRI 23 OCT DAY 9			
0830-1120	________	PE	**27CBCB-EA/D**	(PRACTICE EXERCISE) **AIRWAY MANAGEMENT**	
1130-1220	________	**LP**	**27CBCB-EB/D**	**CARDIAC ARREST MANAGEMENT / AED**	
1230-1250	________	**LP**	**27CBCB-O5/D**	**PHARMACOLOGY (NITRO, BROCHIDILATORS, EPI (1:1000), ORAL, GLUCOSE ACTIVATED CHARCOAL**	
1300-1350				**LUNCH**	
1400-1420	________	**LP**	**27CBCB-O5/D**	**PHARMACOLOGY (NITRO, BROCHIDILATORS, EPI (1:1000), ORAL, GLUCOSE ACTIVATED CHARCOAL**	
1430-1620	________	**LP**	**27CBCB-CI/D**	**CARDIOVASCULAR DISORDERS (A&P CIRCULATORY SYSTEM, NITRO TABLETS AND SPRAY)**	
1630-1720	________	**LP**	**27CBCB-52/D**	**STROKE**	

E COMPANY
CLASS 01-99
WEEK 3

232ND MEDICAL BATTALION
ARMY MEDICAL DEPARTMENT CENTER & SCHOOL
FORT SAM HOUSTON, TEXAS 78234

CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		MON 26 OCT DAY 10			
0830-1220	________	GPE	**27CBCB-EE/D**	(PRACTICAL EXAM) **AIRWAY MANAGEMENT**	
1230-1250	________	**LP**	**27CBCB-EF/D**	**CONCEPT OF PATIENT ASSESSMENT**	
1300-1350				**LUNCH**	
		TUE 27 OCT DAY 11			
0800-0850	________	D	**27CBCB-EB/D**	(DEMONSTRATION) **CPR MANAGEMENT**	
0900-1250	________	PE	**27CBCB-EB/D**	(PRACTICE EXERCISE) **CPR MANAGEMENT**	
1300-1400				**LUNCH**	
1400-1750	________	PE	**27CBCB-EB/D**	(PRACTICE EXERCISE) **CPR MANAGEMENT**	
		WED 28 OCT DAY 12			
0830-1250	________	GPE	**27CBCB-ED/D**	(PRACTICAL EXAM) **CPR MANAGEMENT**	
1300-1350				**LUNCH**	
1400-1720	________	GPE	**27CBCB-ED/D**	(PRACTICAL EXAM) **CPR MANAGEMENT**	
1730-1820	________	**LP**	**27CBCB-EI/D**	REVIEW, **MODULE D-1**	
		THU 29 OCT DAY 13			
0800-0850	________	EX	**27CBCB-EJ/D**	WRITTEN EXAM, **MODULE D-1, PART 1**	
0900-1150	________	**LP**	**27CBCB-53/D**	**RESPIRATORY EMERGENCIES (A&P RESPIRATORY SYSTEMS AND INHALERS)**	
1200-1250	________	**LP**	**27CBCB-56/D**	**ACUTE ABDOMEN**	
1300-1350				**LUNCH**	
1400-1450	________	**LP**	**27CBCB-54/D**	**DIABETES (ORAL GLUCOSE)**	
1500-1550	________	**LP**	**27CBCB-50/D**	**POISON (ACTIVATED CHARCOAL)**	
1600-1650	________	**LP**	**27CBCB-51/D**	**BITES, STINGS, AND ALLERGIES (EPI AUTO**	
1700-1750	________	**LP**	**27CBCB-CK/D**	**SEIZURE DISORDERS**	
		FRI 30 OCT DAY 14			
0630-0720	________	**LP**	**27CBCB-EM/D**	**ASSESSING THE MEDICAL PATIENT**	
0730-0820				**BREAKFAST**	
0830-0920	________	D	**27CBCB-EM/D**	(DEMONSTRATION) **ASSESSING MEDICAL PATIENT**	
0930-1250	________	PE	**27CBCB-EM/D**	(PRACTICE EXERCISE) **ASSESSING MEDICAL PATIENT**	
1300-1350				LUNCH	
1400-1750	________	PE	**27CBCB-EM/D**	(PRACTICE EXERCISE) **ASSESSING MEDICAL PATIENT**	

E COMPANY
CLASS 01-99
WEEK 3

232ND MEDICAL BATTALION
ARMY MEDICAL DEPARTMENT CENTER & SCHOOL
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CHANGE

TIME	INSTRUCTOR	REFERENCE	TITLE	NOTE
		SUN 01 NOV		
1400	__________	USO BRIEFING		
1415-1550	__________	LP 27CBCB-EW/D	REVIEW, MODULE D-2	

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CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		MON 02 NOV DAY 15			
0830-0920	________	EX	27CBCB-EX/D	WRITTEN EXAM, MODULE D-2,	
0930-1250	________	GPE	27CBCB-EO/D	(PRACTICAL EXAM) ASSESSING MEDICAL PATIENTS	
1300-1350				LUNCH	
1400-UTC	________	GPE	27CBCB-EO/D	(PRACTICAL EXAM) ASSESSING MEDICAL PATIENTS	
		TUE 03 NOV DAY 16			
0800-0850	________	LP	27CBCB-CG/D	KINEMATICS OF TRAUMA	
0900-1050	________	LP	27CBCB-33/D	BLEEDING AND SHOCK	
1100-1150	________	LP	27CBCB-CN/D	SOFT TISSUE INJURIES (A&P OF THE	
1200-1250	________	LP	27CBCB-FN/D	HEAD, FACE AND NECK SOFT TISSUE INJURIES (A&P SENSORY SYSTEM)	
1300-1350				LUNCH	
1400-1550	________	PE	27CBCB-FN/D	(PRACTICE EXERCISE) BANDAGING HEAD AND FACE	
1600-1750	________	LP	27CBCB-CL/D	TRAUMATIC INJURIES TO SKULL AND SPINE	
		WED 04 NOV DAY 17			
0830-1020	________	LP	27CBCB-CH/D	TRAUMATIC INJURIES TO THE CHEST	
1030-1120	________	PE	27CBCB-CH/D	(PRACTICE EXERCISE) TREAT CHEST INJURIES	
1130-1220	________	D	27CBCB-33/D	(DEMONSTRATION) CONTROL BLEEDING	
1230-1250	________	PE	27CBCB-33/D	(PRACTICE EXERCISE) CONTROL BLEEDING	
1300-1350				LUNCH	
1400-1750	________	PE	27CBCB-33/D	(PRACTICE EXERCISE) CONTROL BLEEDING	
1800-1850				DINNER	
1900-2020	________	PE	27CBCB-33/D	(PRACTICE EXERCISE) CONTROL BLEEDING	

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WEEK 4

232ND MEDICAL BATTALION
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CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		THU 05 NOV DAY 18			
0800-0850	________	D	**27CBCB-CL/D**	(DEMONSTRATION) **SPINAL IMMOBILIZATION**	
0900-1250	________	PE	**27CBCB-CL/D**	(PRACTICE EXERCISE) **SPINAL IMMOBILIZATION**	
1300-1350				**LUNCH**	
1400-1720	________	PE	**27CBCB-CL/D**	(PRACTICE EXERCISE) **SPINAL IMMOBILIZATION**	
1730-1820				**DINNER**	
1830-1920	________	LP	27CBCB-EW/D	REVIEW, MODULE D-3E	
		FRI 06 NOV DAY 19			
0830-0920	________	EX	**27CBCB-FP/D**	WRITTEN EXAM, **MODULE D-3,**	
0930-1250	________	GPE	**27CBCB-48/D**	(PRACTICAL EXAM) **SPINAL IMMOBILIZATION**	
1300-1350				**LUNCH**	
1400-1420	________	GPE	**27CBCB-48/D**	(PRACTICAL EXAM) **SPINAL IMMOBILIZATION**	
1430-1520	________	**LP**	**27CBCB-CJ/D**	**TRAUMA OF THE ABDOMEN AND GENTIURINARY**	
1530-1620	________	PE	**27CBCB-CJ/D**	(PRACITCE EXERCISE) **ABDOMINAL DRESSING**	
1630-1750	________	**LP**	**27CBCB-63/D**	**BURNS**	
1800-1850				**DINNER**	
1900-1920	________	**LP**	**27CBCB-63/D**	**BURNS**	

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CLASS 01-99
WEEK 5

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CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		MON 09 NOV DAY 20			
0830-1020	________	**LP**	**27CBCB-CO/D**	**UPPER AND LOWER EXTREMITY INJURIES (A&P**	
1030-1150	________	**LP**	**27CBCB-CM/D**	**PRINICIPLES OF BANDAGING AND SPLINTING (HARE**	
1200-1250	________	**LP**	**27CBCB-EN/D**	**ASSESSING TRAUMA PATIENT**	
1300-1350				**LUNCH**	
1400-1450	________	D	**27CBCB-CM/D**	(DEMONSTRATION) **SPLINTING HARE AND REEL**	
1500-1750	________	PE	**27CBCB-CM/D**	(PRACTICE EXERCISE) **SPLINTING/ UPPER / LOWER**	
		TUE 10 NOV DAY 21			
0800-1250	________	PE	**27CBCB-CM/D**	(PRACTICE EXERCISE) **SPLINTING/ UPPER / LOWER**	
1300-1350				**LUNCH**	
1400-1750	________	PE	**27CBCB-CM/D**	(PRACTICE EXERCISE) **SPLINTING/ UPPER / LOWER**	
		WED 11 NOV			
1400-1550	________	LP	27CBCB/EN/D	REVIEW, MODULE D-4	
		THU 12 NOV DAY 22			
0800-0850	________	EX	**27CBCB-FK/D**	WRITTEN EXAM, **MODULE D-4**	
0900-0950	________	D	**27CBCB/EN/D**	(DEMONSTRATION) **ASSESSING TRAUMA PATIENT**	
1000-1250	________	PE	**27CBCB/EN/D**	(PRACTICE EXERCISE) **ASSESSING TRAUMA**	
1300-1350				**LUNCH**	
1400-1750	________	PE	**27CBCB/EN/D**	(PRACTICE EXERCISE) **ASSESSING TRAUMA**	
1800-1850				**DINNER**	
1900-1950	________	PE	**27CBCB/EN/D**	(PRACTICE EXERCISE) **ASSESSING TRAUMA**	

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WEEK 5

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CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		FRI 13 NOV DAY 23			
0830-1250	______	GPE	27CBCB-EG/D	(PRACTICAL EXAM) ASSESSING TRAUMA PATIENT	
1300-1350				LUNCH	
1400-1620	______	GPE	27CBCB-EG/D	(PRACTICAL EXAM) ASSESSING TRAUMA PATIENT	
		SAT 14 NOV DAY 24			
0800-1050	______	LP	27CBCB-60/D	PEDIATRIC EMERGENCIES TRAUMA AND MEDICAL	
1100-1150	______	LP	27CBCB-FO/D	OBGYN	
1200-1250					
1300-1450	______	LP	27CBCB-FO/D	OBGYN	
1500-1550	______	LP	27CBCB-FV/D	GERIATRIC EMERGENCIES	
1600-1650	______	LP	27CBCB-68/D	SPECIAL PATIENTS WITH SPECIAL NEEDS	
1700-1750	______	LP	27CBCB-FS/D	SUBSTANCE ABUSE BEHAVIORAL EMERGENCIES	
1800-1850				DINNER	
1900-1950	______	LP	27CBCB-FS/D	SUBSTANCE ABUSE BEHAVIORAL EMERGENCIES	
		SUN 15 NOV			
1400-1550	______	LP	27CBCB-EN/D	REVIEW, MODULE, D-5	

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WEEK 6

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TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		MON 16 NOV DAY 25			
0830-0920	________	EX	**27CBCB-FU/D**	WRITTEN EXAM, **MODULE D-5,**	
0930-1020	________	**LP**	**27CBCB-57/D**	**COMMUNICABLE DISEASE**	
1030-1220	________	**LP**	**27CBCB-EK/D**	**ENVIRONMENTAL EMERGENCIES (HEAT AND COLD, WATER HAZARDS)**	
1230-1250	________	**LP**	**27CBCB-64/D**	**HAZARDOUS MATERIALS**	
1300-1350				**LUNCH**	
1400-1430	________	**LP**	**27CBCB-64/D**	**HAZARDOUS MATERIALS**	
1440-1530	________	**LP**	**27CBCB-DH/D**	**MULTIPLE CASUALITIES INCIDENTS AND DISASTER MANAGEMENT**	
1540-1630	________	**LP**	**27CBCB-CQ/D**	**GAINING ACCESS**	
1640-1730	________	**LP**	**27CBCB-70/D**	**AMBULANCE OPERATIONS**	
		TUE 17 NOV DAY 26			
0800-1250	________	PE	**27CBCB-DD/D**	(PRACTICE EXERCISE) **RANDOM SKILLS (REEL/SPLINTING/ O2/ SHOCK)**	
1300-1350				**LUNCH**	
1400-1650	________	PE	**27CBCB-DD/D**	(PRACTICE EXERCISE) **RANDOM SKILLS (REEL/SPLINTING/ O2/ SHOCK)**	
1700-1750	________	**LP**	**27CBCB-EP/D**	REVIEW, **MODULE D-6**	
		WED 18 NOV DAY 27			
0830-0920	________	EX	**27CBCB-EP/D**	WRITTEN EXAM, **MODULE D-6**	
0930-1250	________	GPE	**27CBCB-DD/D**	(PRACTICAL EXAM), **RANDOM SKILLS (REEL/SPLINTING/ O2/ SHOCK)**	
1300-1350				**LUNCH**	
1400-1820	________	GPE	**27CBCB-DD/D**	(PRACTICAL EXAM) **RANDOM SKILLS (REEL/SPLINTING/ O2/ SHOCK)**	
		THU 19 NOV DAY 28			
0800-0850	________			STUDENT SURVEY (RANDOM 10%OF TOTAL STUDENTS IN TRAINING)	
0800-1250	________	**LP**	**27CBCB-74/D**	NREMT REVIEW **CHALLENGE**	
1300-1350				**LUNCH**	
1400-1750	________	**LP**	**27CBCB-74/D**	NREMT REVIEW **CHALLENGE**	

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WEEK 6

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TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		FRI 20 NOV DAY 29			
0830-1250	__________	EX	27CBCB-75/D	NREMT EXAM	
1330-1350				LUNCH	
1400-1450	__________	LP	27CBCB-JA/E	PREVENTION AND CONTROL OF INFECTION	
1500-1650	__________	LP	27CBCB-JB/E	PRINCIPLES OF ASEPTIC TECHNIQUE	
1700-1750	__________	LP	27CBCB-CR/E	PUT ON AND REMOVE STERILE GLOVES/ PREFORM PATIENT CARE HAND WASH	

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WEEK 7

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CHANGE

TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		MON 23 NOV DAY 30			
0830-1020	________	PE	27CBCB-CR/E	(PRACTICE EXERCISE) **HAND WASHING / GLOVING**	
1030-1120	________	LP	27CBCB-19/E	**BASIC WOUND CARE**	
1130-1220	________	LP	27CBCB-77/E	**INSERTION AND REMOVAL OF NASOGASTRIC TUBE**	
1230-1250	________	LP	27CBCB-76/E	**ADMINISTER ORO PHARNYGEAL AND**	
1300-1350				**LUNCH**	
1400-1430	________	LP	27CBCB-76/E	**ADMINISTER ORO PHARNYGEAL AND**	
1440-1530	________	LP	27CBCB-FM/E	**ASSIST WITH ACTIVITIES OF DAILY LIVING**	
1540-1620	________	LP	27CBCB-CT/E	**DOCUMENTATION**	
1630-1720	________	LP	27CBCB-FG/E	**CUSTOMER RELATION**	
1730-1820	________	LP	27CBCB-EP/E	REVIEW, **MODULE E**	
		TUE 24 NOV DAY 31			
0800-0850	________	EX	27CBCB-EQ/E	WRITTEN EXAM, **MODULE E**	
0900-0950	________	LP	27CBCB-GB/F	**INVASIVE PROCEDURE SAFETY**	
1000-1050	________	LP	27CBCB-93/F	**BASIC PRINCIPLES OF PREPARATION/**	
1100-1250	________	LP	27CBCB-95/F	**ASSEMBLE AND PREPARE TO DRAW MEDICATION INTO A NEEDLE AND SYRINGE**	
1300-1350				**LUNCH**	
1400-1450	________	LP	27CBCB-FQ/F	**THE ARMY IMMUNIZATION PROGRAM**	
1500-1650	________	LP	27CBCB-CU/F	**ADMINISTER INTRAMUSCULAR, SUBCUTANEOUS**	
		WED 25 NOV DAY 32			
0830-0920	________	LP	27CBCB-AC/F	**OBTAIN LABEL BLOOD SPECIMEN**	
0930-1020	________	LP	27CBCB-FR/F	**BASIC MATH CALCULATING INTRAVENOUS FLOWRATE**	
1030-1220	________	LP	27CBCB-DJ/F	**INITIATING AND MANAGING A PATIENT WITH AN INTRAVENOUS INFUSION**	

THU 26 NOV

(THANKSGIVING)

FRI 27 NOV

(TRAINING HOLIDAY)

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WEEK 8

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TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
			MON 30 NOV DAY 33		
0830-0920	__________	PE	**27CBCB-ER/F**	(PRACTICE EXERCISE) **ASSEMBLE A NEEDLE AND SYRINGE**	
0930-1250	__________	PE	**27CBCB-AB/F**	(PRACTICE EXERCISE) **INJECTIONS**	
1300-1350				**LUNCH**	
1400-1750	__________	PE	**27CBCB-AB/F**	(PRACTICE EXERCISE) **INJECTIONS**	
1800-1850				**DINNER**	
1900-1920	__________	PE	**27CBCB-AB/F**	(PRACTICE EXERCISE) **INJECTIONS**	
			TUE 01 DEC DAY 34		
0800-1150	__________	GPE	**27CBCB-AB/F**	(PRACTICAL EXAM) **INJECTIONS**	
1200-1250	__________	PE	**27CBCB-AC/F**	(PRACTICE EXERCISE) **BLOOD DRAW**	
1300-1350				**LUNCH**	
1400-1650	__________	PE	**27CBCB-AC/F**	(PRACTICE EXERCISE) **BLOOD DRAW**	
			WED 02 DEC DAY 35		
0830-0920	__________	D	**27CBCB-DJ/F**	(DEMONSTRATION) **INITIATE IV INFUSION**	
0930-1250	__________	PE	**27CBCB-DJ/F**	(PRACTICE EXERCISE) **INITIATE IV INFUSION**	
1300-1350				**LUNCH**	
1400-1750	__________	PE	**27CBCB-DJ/F**	(PRACTICE EXERCISE) **INITIATE IV INFUSION**	
1800-1850				**DINNER**	
1900-1920	__________	PE	**27CBCB-DJ/F**	(PRACTICE EXERCISE) **INITIATE IV INFUSION**	
1930-2020	__________	**LP**	**27CBCB-AG/F**	REVIEW, **MODULE F**	
			THU 03 DEC DAY 36		
0800-0850	__________	EX	**27CBCB-AH/F**	WRITTEN EXAM, **MODULE F**	
0900-1250	__________	GPE	**27CBCB-AI/F**	(PRACTICAL EXAM) **IV / BLOOD DRAW**	
1300-1350				**LUNCH**	
1400-1730	__________	GPE	**27CBCB-AI/F**	(PRACTICAL EXAM) **IV / BLOOD DRAW**	
			FRI 04 DEC DAY 37		
0400-0820	__________	EX	**27CBCB-FE/J**	RAPFT	
0830-0920	__________	**LP**	**27CBCB-85/G**	**ASSIST WITH SICKCALL**	
0930-1020	__________	**LP**	**27CBCB-AD/G**	**INSTILL EYE DROPS/ IRRIGATION**	
1030-1120	__________	**LP**	**27CBCB-AK/G**	**TREAT COMMON SKIN DISORDERS**	
1130-1220	__________	**LP**	**27CBCB-DL/G**	**BASIC FIELD HYGIENE FOR PREVENTION OF DISEASE**	
1230-1250	__________	**LP**	**27CBCB-AN/G**	**DISINFECT WATER FOR DRINKING**	
1300-1350				**LUNCH**	

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WEEK 8

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TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
1400-1430	________	LP	27CBCB-AN/G	DISINFECT WATER FOR DRINKING	
1440-1530	________	LP	27CBCB-AX/G	TREATMENT OF MICROWAVE AND LASER INJURIES	
1540-1630	________	LP	27CBCB-AY/G	TREAT BATTLE FIELD CASUALITIES FOR COMBAT STRESS	
1640-1730	________	LP	27CBCB-ES/G	MANAGEMENT OF UNCONTROL BEHAVIORS	
1740-1830	________	LP	27CBCB-ET/G	GSW SHRAPNEL AND BLAST INJURIES	

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TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
		MON 07 DEC DAY 38			
0820-1250	________	**OT**	**27CBKB-FI/G**	COMMAND INSPECTION	
1300-1350				**LUNCH**	
1400-1450	________	**LP**	**27CBCB-GY/G**	**TRIAGE/ MEDEVAC REQUEST**	
1500-1550	________	**LP**	**27CBCB-CZ/G**	**FIELD MEDICAL CARD**	
1600-1650	________	**LP**	**27CBCB-BC/G**	**RADIO PROCEDURES**	
1700-1750	________	**LP**	**27CBCB-CV/G**	**MEDIC IN TODAY'S ARMY**	
1800-1850				**DINNER**	
1900-1950	________	**LP**	**27CBCB-BD/G**	REVIEW, **MODULE G**	
		TUE 08 DEC DAY 39			
0800-0850	________	EX	**27CBCB-BG/G**	WRITTEN EXAM, **MODULE G**	
0900-0950	________	**LP**	**27CBCB-DD/H**	**NBC EQUIPMENT OVERVIEW**	
1000-1050	________	**LP**	**27CBCB-DC/H**	**BIOLOGICAL AGENTS**	
1100-1150	________	**LP**	**27CBCB-AP/H**	**NERVE AGENTS**	
1200-1250	________	**LP**	**27CBCB-DA/H**	**VESICANT AND CYANIDE AGENTS**	
1300-1350				**LUNCH**	
1400-1450	________	**LP**	**27CBCB-DE/H**	**ESTABLISHMENT AND OPERATION OF A CHEMICAL DECON STATION**	
1500-1550	________	**LP**	**27CBCB-EU/H**	REVIEW, **MODULE H**	
		WED 09 DEC DAY 40			
0830-1020	________	**LP**	**27CBCB-EU/H**	REVIEW, **MODULE H**	
1030-1120	________	EX	**27CBCB-EV/H**	WRITTEN EXAM, **MODULE H**	
1130-1250	________			STUDENT ASSESSMENT QUESTIONAIRE (100 STUDENTS)	
1300-1350	________			**LUNCH**	
1400-1620	________	**LP**	**27CBCB-GC/J**	**ACADEMIC SUMMARY/ CLASSROOM MAINTANCE**	
FTX INTRO		THU 10 DEC DAY 41			
0700-UTC	________	**LP**	**27CBCB-VH/I**	**FTX MOVEMENT/ORIENTATION**	
WAR DAY 1		FRI 11 DEC DAY 42			
0830-2000	________	**LP**	**27CBCB-VH/I**	**FTX**	
WAR DAY 2		SAT 12 DEC			
0830-2000	________	**LP**	**27CBCB-VH/I**	**FTX**	
WAR DAY 3		SUN 13 DEC			
0830-2000	________	**LP**	**27CBCB-VH/I**	**FTX**	

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WEEK 10

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TIME	INSTRUCTOR	REFERENCE		TITLE	NOTE
WAR DAY 4			MON 14 DEC DAY 43		
0830-2000	________	**LP**	**27CBCB-VH/I**	**FTX**	
WAR DAY 5			TUE 15 DEC DAY 44		
0830-2000	________	**LP**	**27CBCB-VH/I**	**FTX**	
			WED 16 DEC DAY 45		
0800-1400	________	**LP**	**27CBCB-VH/I**	**FTX SITE CLEAN-UP**	
1410-UTC	________	**LP**	**27CBCB-BH/I**	**MOVEMENT TO COMPANY AREA (FSH)**	
			THU 17 DEC DAY 46		
0730-1050	________	**LP**	**27CBCB-FH/J**	**CIS**	
1100-1250	________	**LP**	**27CBCB-FH/J**	**OUT-PROCESSING**	
1300-1350				**LUNCH**	
1400-1520	________	**LP**	**27CBCB-FH/J**	**OUT-PROCESSING**	
1530-1700	________			GRADUATION REHEARSEL	
			FRI 18 DEC DAY 47		
0800-1150	________	**LP**	**27CBCB-FH/J**	**OUTPROCESSING**	
1200-1240				**LUNCH**	
1245-1300		**LP**	**27CBCB-FJ/J**	**MOVEMENT TO AUDITORIUM/ SEATING OF CLASS**	
1330-1500	________	**LP**	**27CBJB-FJ/J**	**GRADUATION**	

DOES NOT INCLUDE HOURS OF PARADE PRACTICE, PARADE CEREMONY, BRIGADE RUNS, COMMANDERS TIME, OR EXTRA STUDY HALLS.

NOTE 1: **IF COMPANY SIZE IS 350 OR LARGER, APFT WILL START AT 0430**
NOTE 2: **LP 61F (CHILDBIRTH) IS CONDUCTED: .5 VIDEO, .5 DEMO, 2.0 CONF**
NOTE 3: **NO P.T. DUE TO NREMT EXAM PER BN COMMANDER**
NOTE 4: **STUDENTS NOT TAKING NREMT EXAM WILL DO POI RELATED TRAINING/STUDY**
NOTE 5: **NO P.T. TODAY DUE TO THE COMMAND INSPECTION**
NOTE 6: **COMPANY EO REPRESENTIVE WILL TEACH THIS CLASS IN THE EVENT THAT THE AMEDDC&S REPRESENTATIVE IS A NO SHOW**

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APPENDIX L

Control Group Program of Instruction

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DRAFT POI SCHEDULE AS OF 22 APR 98

PERIOD	INSTRUCTOR	REFERENCE	TITLE	NOTE
			Day 1	
4	______ OT	27CBCB-FA-J	In processing (Personnel)	
1	______ OT	27CBCB-FA-J	Bn CDR CSM CoCDR 1SG Tng Off Sr Inst Chaplain	
.5	______ LP	27CBCB-FA-J	BLOOD BORNE EXPOSURE PLAN (CO. TRAINING OFFICER)	
1	______ OT	27CBCB-FA-J	ER NG Orientation	
1	______ OT	27CBCB-FA-J	POSH Training	NOTE 6
.5	______ OT	27CBCB-FA-J	SAEDA CID	
8				
			Day 2	
3	______ OT	27CBCB-FA-J	Inprocessing (CIS)	
1	______ LP	27CBCB-FB-J	STD Class (Evans Auditorium)	
.5	______ LP	27CBCB-FA/J	Fire Department (Inspector Miller)	
1	______ LP	27CBCB-FF/J	Course Orientation1	
	______ LP	27CBCB-FD/AB	"Effective Study Skills"	
2	______ LP	27CBCB-03/AB	Medical Terminology & Abbreviations	
8.5				
			Day 3	
3	______ EX	27CBJB-FE/J	Diagnostic P.T. Test	NOTE 1
1	______ LP	27CBCB-02/AB	The Human Body	
2	______ LP	27CBCB-GA/AB	Baseline Vital Signs & Sample History	
3	______ PE	27CBCB-GA/AB	(Practice Exercise) Vital Signs	
1	______ LP	27CBCB-21/AB	Review, Model AB	
10		(End of Module AB)		
			Day 4	
1	______ EX	27CBCB-22/AB	Written Exam Module AB	
3	______ GPE	27CBCB-12/AB	(Practical Exam) Vital Signs	
3	______ LP	27CBCB-26/C	CPR	
UTC			HEP #1	
7				
			Day 5	
1	______ D	27CBCB-26/C	(Demonstration) CPR	
8	______ PE	27CBCB-26/C	(Practice Exercise) CPR	
9				
			Day 6	
8	______ PE	27CBCB-26/C	(Practical Exercise) CPR	
1	______ IP	27CBCB-28/C	Review Module C	
9		(End of Module C)		
			Day 7	
1	______ EX	27CBCB-29/C	Written Exam Module C	
8	______ GPE	27CBCB-30/C	(Practical Exam) CPR	
9				

POI DRAFT SCHEDULE

PERIOD	INSTRUCTOR		REFERENCE	TITLE	NOTE
				Day 8	
2	____________	LP	27CBCB-01/D	Orientation for the EMT-B	
1	____________	LP	27CBCB-04/D	Legal aspects of the EMT	
2	____________	LP	27CBCB-EA/D	Airway Management	
1	____________	D	27CBCB-EA/D	(Demonstration) Airway Management	
6					
				Day 9	
8	____________	PE	27CBCB-EA/D	(Practice Exercise) Airway Management	
				Day 10	
4	____________	GPE	27CBCB-EE/D	(Practical Examination) Airway Management	
1	____________	LP	27CBCB-EF/D	Concept of Patient Assessment	
1	____________	D	27CBCB-EF/D	(Demonstration) PT Assessment	
6					
				Day 11	
1	____________	LP	27CBCB-EB/D	Cardiac Arrest Management/AED	
1	____________	LP	27CBCB-05/D	Pharmacology	
2	____________	LP	27CBCB-CI/D	Cardiovascular Disorders	
1	____________	LP	27CBCB-52/D	Stroke	
5					
				DAY 12	
1	____________	D	27CBCB-EB/D	(Demonstration) CPR Management	
8	____________	PE	27CBCB-EB/D	(Practice Exercise) CPR Management	
9					
				Day 13	
8	____________	GPE	27CBCB-ED/D	(practical Exam) CPR Management	
1	____________	LP	27CBCB-EI/D	Review Module D-1	
9			(End of Module D-1)		
				Day 14	
1	____________	EX	27CBCB-EJ/D	Written Exam Module D-1	
3	____________	LP	27CBCB-53/D	Respiration Emergencies	
1	____________	LP	27CBCB-56/D	Acute Abdomen	
1	____________	LP	27CBCB-54/D	Diabetes	
1	____________	LP	27CBCB-50/D	Poisons	
1	____________	LP	27CBCB-51/D	Bites, Stings, & Allergies	
8					
				Day 15	
1	____________	LP	27CBCB-CK/D	Seizure Disorders	
1	____________	LP	27CBCB-EM/D	Assessing the Medical Patient	
1	____________	D	27CBCB-EM/D	(Demonstration) Assessing Medical Patient	
4	____________	PE	27CBCB-EM/D	(Practice Exercise) Assessing Medical Patients	
7					

POI DRAFT SCHEDULE

PERIOD	INSTRUCTOR	REFERENCE	TITLE	NOTE
			Day 16	
4	____________ PE	27CBCB-EM/D	(Practice Exercise) Assessing Medical Patients	
1	____________ LP	27CBCB-EW/D	Review Module D-2	
5		(End of Module D-2)		
			Day 17	
1	____________ EX	27CBCB-EX/D	(Written Exam) Module D-2	
8	____________ GPE	27CBCB-EO/D	(Practical Exam) Assessing Medical Patients	
9				
			Day 18	
1	____________ LP	27CBCB-CG/D	Kinematics of Trauma	
2	____________ LP	27CBCB-33/D	Bleeding & Shock	
1	____________ LP	27CBCB-CN/D	Soft Tissue Injuries	
1	____________ LP	27CBCB-FN/D	Head, Face, Neck Soft Tissue Injuries	
2	____________ PE	27CBCB-FN/D	(Practice Exercise) Bandaging Head & Face	
2	____________ LP	27CBCB-CL/D	Traumatic Injuries to Skull & Spine	
9				
			Day 19	
2	____________ LP	27CBCB-CH/D	Traumatic Chest Injuries	
1	____________ PE	27CBCB-CH/D	(Practice Exercise) Treat Chest Injury	
1	____________ D	27CBCB-33/D	(Demonstration) Control Bleeding	
6	____________ PE	27CBCB-33/D	(Practical Exercise) Control Bleeding	
10				
			Day 20	
1	____________ D	27CBCB-CL/D	(Demonstration) Spinal Immobilization	
8	____________ PE	27CBCB-CL/D	(Practice Exercise) Spinal Immobilization	
1	____________ LP	27CBCB-EH/D	Review Module D-3	
10		(End of Module D-3)		
			Day 21	
1	____________ EX	27CBCB-FP/D	Written Exam Module D-3	
4	____________ GPE	27CBCB-48/D	(Practical Exam) Spinal Immobilization	
1	____________ LP	27CBCB-CJ/D	Trauma of the Abdomen & Genitourinary System	
1	____________ PE	27CBCB-CJ/D	(Practice Exercise) Abdomen Dressings	
2	____________ LP	27CBCB-63/D	Treatment & Management of Burns	
9				
			Day 22	
2	____________ LP	27CBCB-CO/D	Upper & Lower Extremity Injuries	
2	____________ LP	27CBCB-CM/D	Principles of Bandaging & Splinting	
1	____________ LP	27CBCB-EN/D	Assessing the Trauma Patient	
3	____________ D	27CBCB-CM/D	(Demonstration) Splint (Hare & Reel)	
1	____________ PE	27CBCB-CM/D	(Practice Exercise) Splinting Upper & Lower Extremity (Reel)	
9				

POI DRAFT SCHEDULE

PERIOD	INSTRUCTOR		REFERENCE	TITLE	NOTE
				Day 23	
9	____________	PE	27CBCB-CM/D	(Practice Exercise) Splinting/Upper Lower	
				Day 24	
1	____________	D	27CBCB-EN/D	(Demonstration) Assessing Trauma Patients	
8	____________	PE	27CBCB-EN/D	(Practice Exercise) Assessing Trauma Patients	
1	____________	LP	27CBCB-EC/D	Review Module D-4	
10				(End of Module D-4)	
				Day 25	
1	____________	EX	27CBCB-EY/D	Written Exam Module D-4	
3	____________	LP	27CBCB-60/D	Pediatric Emergencies	
3	____________	LP	27CBCB-FO/D	OB/GYN	Note 2
1	____________	LP	27CBCB-FV/D	Geriatric Emergencies	
1	____________	LP	27CBCB-68/D	Special Patients w/Special Needs	
2	____________	LP	27CBCB-FS/D	Substance Abuse & Behavioral Emergencies	
11					
				Day 26	
8	____________	GPE	27CBCB-EG/D	(Practical Exam) Assessing Trauma Patients	
1	____________	LP	27CBCB-FT/D	Review Module D-5	
9				(End of Module D-5)	
				Day 27	
1	____________	EX	27CBCB-FU/D	Written Exam Module D-5	
1	____________	LP	27CBCB-57/D	Communicable Disease	
2	____________	LP	27CBCB-EK/D	Environmental Emergencies	
1	____________	LP	27CBCB-64/D	Hazardous Materials	
1	____________	LP	27CBCB-DH/D	Multiple Casualty Incidents & Disasters Management	
1	____________	LP	27CBCB-CQ/D	Gaining Access	
1	____________	LP	27CBCB-70/D	Ambulance Operations	
8					
				Day 28	
8	____________	PE	27CBCB-RS/D	(Practice Exercise) Random Skills (Reel/Splinting/02/Shock)	
1	____________	LP	27CBCB-FK/D	Review Module D-6	
9					
				Day 29	
1	____________	EX	27CBCB-EP/D	Written Exam Module D-6	
8	____________	GPE	27CBCB-GS/D	(Practical Exam) Random Skills (Reel/Splinting/O2/Shock	
9					

POI DRAFT SCHEDULE

PERIOD	INSTRUCTOR	REFERENCE	TITLE	NOTE
			Day 30	
1	____________		Student Survey (Random 10% of Total Students in Training)	
8	____________ LP	27CBCB-74/D	NREMT Review Challenge	
9				
			Day 31	
4	____________ EX	27CBCB-75/D	NREMT Exam	Notes 3,4
1	____________ LP	27CBCB-JA/E	Prevention & Control of Infection	
2	____________ LP	27CBCB-JB/E	Principles of Aseptic Technique	
1	____________ LP	27CBCB-CR/E	Put on & remove Sterile Gloves, Perform Care-Hand Wash	
8				
			Day 32	
2	____________ PE	27CBCB-CR/E	(Practice Exercise) Hand Washing/Gloving	
1	____________ LP	27CBCB-19/E	Basic Wound Care	
1	____________ LP	27CBCB-77/E	Insert & Remove a Nasogastric Tube	
1	____________ LP	27CBCB-76/E	Oropharyngeal & Nasotracheal Tube	
1	____________ LP	27CBCB-FM/E	Assist with Activities of Daily Living	
1	____________ LP	27CBCB-CT/E	Documentation	
1	____________ LP	27CBCB-FG/E	Customer Relations	
1	____________ LP	27CBCB-EP/E	Review Module E (End of Module E)	
9				

NOTE: MATH HOMEWORK ASSIGNMENT IN STUDY MODULE IS TO BE COMPLETED PRIOR TO THE CLASS ON BASIC MATH & CALCULATING INTRAVENOUS FLOW RATE AND BROUGHT TO CLASS.

PERIOD	INSTRUCTOR	REFERENCE	TITLE	NOTE
			Day 33	
1	____________ EX	27CBCB-EQ/E	Written Exam Module E	
1	____________ LP	27CBCB-GB/F	Invasive Procedure Safety	
1	____________ LP	27CBCB-93/F	Prepare & Administer Medications	
2	____________ LP	27CBCB-95/F	Assemble & Draw Medications into a Needle & Syringe	
1	____________ LP .	27CBCB-FQ/F	The Army Immunization Program	
6				
			Day 34	
2	____________ LP	27CBCB-CU/F	Administer Intramuscular Subcutaneous & Intravenous Flow Rate	
1	____________ LP	27CBCB-AC/F	Obtain Label Blood Specimen	
1	____________ LP	27CBCB-FR/F	Basic Math & Calculating Intravenous Flow Rate	
2	____________ LP	27CBCB-DJ/F	Initiating & Managing Patient with an Intravenous Infusion	
6				

POI DRAFT SCHEDULE

PERIOD	INSTRUCTOR		REFERENCE	TITLE	NOTE
				Day 35	
1	____________	PE	27CBCB-ER/F	(Practice Exercise) Assemble A Needle & Syringe	
8	____________	PE	27CBCB-CU/F	(Practice Exam) Injections	
9					
				Day 36	
4	____________	GPE	27CBCB-AB/F	(Practical Exam) Injections	
4	____________	PE	27CBCB-AC/F	(Practice Exercise Blood Draw	
8					
				Day 37	
1	____________	D	27CBCB-DJ/F	(Demonstration) Initiate IV Infusion	
8	____________	PE	27CBCB-DJ/F	(Practice Exercise) Initiate IV Infusion	
1	____________	LP	27CBCB-AG/F	Review Module F	
10					
				Day 38	
3	____________	EX	27CBCB-FE/J	RAPFT	Note 1
1	____________	EX	27CBCB-AH/F	Written Exam Module F	
8	____________	GPE	27CBCB-AI/F	(Practical Exam) IV/Blood Draw (End of Module F)	
12					
				Day 39	
5	____________	OT	27CBKB-FI/G	Command Inspection	Note 5
1	____________	LP	27CBCB-85G	Assist with Sick Call	
1	____________	LP	27CBCB-80/G	Instill Eye Drops/Irrigation	
1	____________	LP	27CBCB-AK/G	Treat Common Skin Disorders	
1	____________	LP	27CBCB-DL/G	Basic Field Hygiene	
9					
				Day 40	
1	____________	LP	27CBCB-AN/G	Disinfect Water for Drinking	
1	____________	LP	27CBCB-AX/G	Treatment of Microwave & Laser Injuries	
1	____________	LP	27CBCB-AY/G	Treat Battlefield Casualties for Combat Stress	
1	____________	LP	27CBCB-ES/G	Management of Uncontrolled Behaviors	
1	____________	LP	27CBCB-ET/G	GSW, Shrapnel, & Blast Injuries	
1	____________	LP	27CBCB-CY/G	Triage & MEDEVAC Requests	
1	____________	LP	27CBCB-CZ/G	Field Medical Card	
1	____________	LP	27CBCB-BC/G	Radio Procedures	
1	____________	LP	27CBCB-CV/G	The Medic in Today's Army	
1	____________	LP	27CBCB-BD/G	Review Module G (End of Module G)	
10					
				Day 41	
1	____________	EX	27CBCB-BG/G	Written Exam Module G	
1	____________	LP	27CBCB-DD/H	NBC Equipment Overview	
1	____________	LP	27CBCB-DC/H	Biological Agents	
1	____________	LP	27CBCB-AP/H	Nerve Agents	
1	____________	LP	27CBCB-DA/H	Vesicants & Cyanide Agents	
2	____________	LP	27CBCB-DE/H	Establish & Operate a Chemical Decon Station	
1	____________	LP	27CBCB-EU/H	Review Module H	
8					

POI DRAFT SCHEDULE

PERIOD	INSTRUCTOR		REFERENCE	TITLE	NOTE
				Day 42	
2	________	LP	27CBCB-EU/H	Review Module H	
1	________	EX	27CBCB-EV/H	Written Exam Module H	
3	________	LP	27CBCB-GC/J	Academic Summary/Classroom Maint	
1	________	LP	27CBCB-FL/J	Commander's Time	
7				(End of Module H)	
FTX ORIENTATION				Day 43	
9	________		27CBCB-BH/I	Movement to FTX	
WAR DAYS 1 - 5				Day 44 - 48	
45	________		27CBCB-BH/I	FTX	
FTX OUTPROCESSING				Day 49	
7	________		27CBCB-BH/I	FTX Site Clean-up	
1	________		27CBCB-BH/I	Movement to Company Area	
8					
Day 50					
3	________		27CBCB-FH/J	CIS Turn-in	
5.5	________		27CBCB-FH/J	Out Processing	
8.5					
Day 51					
1	________		27CBCB-FJ/J	Rehearsal-Selected Individuals	
.5	________		27CBCB-FJ/J	Movement to Theater/Seating of Class	
2	________		27CBCB-FJ/J	Graduation	
3.5					

TOTAL DIADACTIC HOURS 140
(Modules, Reviews, Written Exams)

TOTAL HANDS-ON HOURS 185 + 62 hrs FTX = 247
(Demo, PE, GPE, FTX)

TOTAL ADMINISTRATIVE HOURS 41.5
(In-Process, APFT, CI, Out-Processing)

DOES NOT INCLUDE HOURS OF PARADE PRACTICE, PARADE CEREMONY, BRIGADE RUNS, COMMANDER'S TIME, OR EXTRA STUDY HALLS.

POI DRAFT SCHEDULE

Note 1:	If company size is 350 or larger, APFT will start at 0430.
Note 2:	LP 61F (Childbirth) is conducted: .5 Video, .5 demo, 2.0 conference.
Note 3:	No P.T. due to NREMT exam per BN commander.
Note 4:	Students not taking NREMT exam will do POI-related training/study.
Note 5:	No P.T. today due to the command inspection.
Note 6:	Company EO representative will teach this class in the event that the AMEDDC&S representatives is a no-show.

E COMPANY
CLASS 01-99
WEEK 1

232ND MEDICAL BATTALION
ARMY MEDICAL DEPARTMENT CENTER & SCHOOL
FORT SAM HOUSTON, TEXAS 78234

CHANGE

TIME	INSTRUCTOR		REFERENCE	TITLE	NOTE
				TUE 13 OCT DAY 1	
0600-0700	____________	OT		POSH Training	Note 6
0700-0750				BREAKFAST	
0800-1250	____________	OT	27CBCB-FA/J	In Processing (Personnel)	
1300-1350				LUNCH	
1400-1450	____________	OT	27CBCB-FA/J	Bn CDR/CSM/CoCDR/1SG/Tng Off SR Inst/Chaplain	
1500-1530	____________	LP	27CBCB-FC/J	Blood Borne Exposure Plan (Co. Training Officer)	
1530-1620	____________	OT	27CBCB-FA/J	ER/NG Orientation	
1630-1700	____________	OT	27CBCB-FA.J	SAEDA/CID	
				WED 14 OCT DAY 2	
0830-1050	____________	OT	27CBCB-FA/J	Inprocessing (CIS)	
1120-1220	____________	LP	27CBCB-FB/J	Sexually Transmitted Diseases (Evans Auditorium)	
1230-1250	____________	LP	27CBCB-FA/J	Fire Department (Insp. Miller)	
1300-1350				LUNCH	
1400-1450	____________	LP	27CBCB-FF/J	Orientation (Classroom) (Admin/Course Overview)	
1500-1550	____________	LP	27CBCB-FD/AB	Effective Study Skills	
1600-1750	____________	LP	27CBCB-03/AB	Basic Medical Terminology & Abbreviations	
				THU 15 OCT DAY 3	
0800-0850	____________	LP	27CBCB-02/AB	Human Body	
0900-1050	____________	LP	27CBCB-GA/AB	Baseline Vital Signs & Sample History	
1100-1250	____________	PE	27CBCB-GA/AB	(Practice Exercise) Vital Signs	
1300-1350				LUNCH	
1400-1450	____________	PE	27CBCB-GA/AB	(Practice Exercise) Vital Signs	
1500-1550	____________	LP	27CBCB-21/AB	Review Module A/B	
1600-UTC				LRC #3 Orientation	
				FRI 16 OCT DAY 4	
0430-0820	____________	EX	27CBJB-FE/J	Diagnostic P.T. Test	Note 1
0830-0920	____________	EX	27CBCB-22/AB	Written Exam Module A/B	
0930-1220	____________	GPE	27CBCB-12/AB	(Practical Exam) Vital Signs	
1230-1250	____________	LP	27CBCB-26/C	CPR	
1300-1350				LUNCH	
1400-1550	____________	LP	27CBCB-26/C	CPR	
1600-UTC				HEP #1	

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APPENDIX M

Training Model Differences

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Differences In Training – Breakdown of POI in Hours and Minutes

Topic	Sept. 1998 - During Study Control (C) Company	Oct. 1999 – After study Company	Experimental (E) POI	Oct. 1998 – During Study Differences of (C) & (E)	Differences as of Oct. '99 After Study Differences of POI & (E) POI
EMT-B Classes (excluding basic life-saving skills)	61:50	43:15	73:35	12:35 (E)	30:20 (E)
EMT-B Hands-on Labs (excluding basic life- savings skills)	84	22:00	107:15	23:15 (E)	85:15 (E)
EMT-B Review	10:30	16:30	26:00	16:10 (E)	10:10 (E)
EMT-B Class exams	10:00	9:00	9:00	1:00 (C)	0
Instructor Demonstration of EMT-B Skills	8:30	8:30	1:00	7:30 (C)	7:30 (C)
Military Medic class	15:00	9:00	24:25	9:25 (E)	15:25 (E)
Military Medic hands-on Labs	0	0	12:25	12:25 (E)	12:25 (E)
Military Medic class exams	0	2:00	2:00	2:00 (E)	0
ER & ICU clinical rotations	0	0	16:00	16:00 (E)	16:00 (E)
Basic CPR Class Hands-on lab	1:40 18:00	2:50 4:00	4:00 11:00	3:10 (E) 4:07 (C)	1:50 (E) 7:00 (E)
Physical Assessment Class Hands-on lab	2:10 12:50	3:30 8:00	6:00 11:45	4:30 (E) 1:05 (C)	3:10 (E) 3:10 (E)
Basic Airway Class Hands-on lab	1:40 12:50	2:50 8:00	4:00 8:00	3:10 (E) 4:50 (C)	1:50 (E) 0
Advanced Airway Class Hands-on lab	0 0	0 0	1:15 1:30	1:15 (E) 1:30 (E)	1:15 (E) 1:30 (E)

Topic	Sept. 1998 - During Study Control (C) Company	Oct. 1999 – After study Company	Experimental (E) POI	Oct. 1998 – During Study Differences of (C) & (E)	Differences as of Oct. '99 After Study Differences of POI & (E) POI
Bleeding Control/Shock Management (bandaging, splinting, PASG)					
Class	2:30	4:00	4:00	2:10 (E)	0
Hands-on lab	4:10	11:30	9:45	5:35 (E)	2:25 (C)
IV Therapy					
Class	2:30	6:30	1:30	1:00 (C)	5:00 (C)
Hands-on lab	7:30	12:00	8:00	1:30 (C)	4:00 (C)
NBC					
Class	4:15	5:30	6:00	2:25 (E)	30 min (E)
Hands-on lab	0	0	6:45	6:45 (E)	6:45 (E)
Sick Call					
Class	2:50	2:50	1:00	1:50 (C)	1:50 (C)
Hands-on lab	0	0	3:45	3:45 (E)	3:45 (E)
Evacuation					
Class	1:50	50 min.	1:00	50 min. (C)	10 min. (E)
Hands-on lab	0	0	4:00	4:00 (E)	4:00 (E)
Computer					
Hands-on lab	0	0	4:00	4:00 (E)	4:00 (E)
Total Time for Hands-on lab (includes non-life-saving, life-saving, CPR, military medic, clinical rotations, NBC, Sick Call, Evacuation, & Computer)	126:30	57:30	206:05	80:15 (E)	149:15 (E)

APPENDIX N

MT2K Student Evaluation Plan (SEP)

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U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL

ACADEMY OF HEALTH SCIENCES

DEPARTMENT OF 232D MEDICAL BATTALION

STUDENT EVALUATION PLAN

300-91B10

MEDICAL SPECIALIST COURSE

____
LAURIE J. SANDSTROM
Major, AN
Program Manager

____
DORENE HURT
Lieutenant Colonel, MS
Course Director

____
RICHARD D. SHIPLEY
Colonel, DC
Dean, Academy of Health Sciences

DATE APPROVED________

MCCS-HRC

STUDENT EVALUATION PLAN
300-91B10, MEDICAL SPECIALIST COURSE

I. PREFACE. This evaluation plan is applicable to the students of the 91B10 Medical Specialist Course. This evaluation plan establishes policies, assigns responsibilities, and prescribes procedures for the execution of the 300-91B10 (MT2K Study), Medical Specialist Course. The policies, procedures, and responsibilities prescribed shall apply to members of all U.S. military services participating in this training program.

II. COURSE DESCRIPTION.

A. The 300-91B10 (MT2K Study), Medical Specialist Course is conducted at Fort Sam Houston, TX, by the 232d Medical Battalion and the Center for Healthcare Education and Studies, Research and Studies Branch, U.S. Army Medical Department Center and School (AMEDDC&S). This ten week course is designed to train Active Army Component enlisted soldiers to perform emergency medical treatment and routine patient care duties in field units and military treatment facilities. Participation in this study is strictly voluntary and failure to achieve course completion will not negatively impact these participants.

B. The Medical Specialist Course is ten weeks (50 training days) in length. The core curriculum provides an introduction to fundamental health care skills and knowledge involving both routine patient care and the administration of emergency medical treatment on and off the battlefield. Opportunity is provided during this course to test for the National Registry Emergency Medical Technician (NREMT) Certification. The NREMT is not a requirement for successful course completion.

C. Course Accelerations: There are no course accelerations. Soldiers who are currently NREMT Certified or hold a current Paramedic State Certification are not eligible to participate in this research study.

D. Service Obligation: Minimum time in service remaining at the end of the course for active duty personnel must be at least 10 months IAW AR 614-200.

III. PURPOSES OF EXAMINATIONS: Students in the 300-91B10 (MT2K Study), Medical Specialist Course receive structured evaluations. The purposes of examinations include, but are not limited to, the following:

A. To monitor progress in meeting course objectives.

B. To provide feedback on academic progress or achievement.

C. To measure the degree to which the stated course objectives have been achieved.

D. To support decisions for counseling, recycling into traditional 91B10 training.

E. To rank-order students for the determination of academic honor.

F. To provide feedback to the Course Director and Principal Investigator on the effectiveness of instruction and instructional materials as part of continuous course evaluation and quality improvement.

IV. COURSE REQUIREMENTS:

A. Academic Standards: This course consists of an Emergency Medical Technician Phase and Military Specific Medical Skills Phase. Soldiers will complete all written exam-inations and graded practical exercises under specific conditions as evaluated by an established standards of performance. Examination questions and graded practical exercises are derived from Phase Objectives. Standards for course completion and award of MOS 91B10 are as follows:

1. Earn 70% of the maximum points assigned to each written examination with the exception of the American Heart Association Cardiopulmonary Resuscitation (CPR) examination.

2. Earn 84% of the maximum points assigned to each written examination with the exception of the American Heart Association Cardiopulmonary Resuscitation (CPR) examination.

3. Obtain CPR verification IAW American Heart Association standards.

4. Receive a "GO" on all Graded Practical Exercises (GPE).

5. Pass the Army Physical Fitness Test or have an approved waiver IAW AMEDDC&S Reg 351-12.

6. Meet the height and weight standards or have an approved waiver IAW AR 40-501 or IAW AR 350-41.

7. All soldiers must take the NREMT written examination.

B. Nonacademic Standards:

1. Standards of Conduct: Soldiers are expected to adhere to the standards of conduct outlined in AMEDDC&S Reg 351-12. Violation of these standards by actions such as cheating, forgery, disrespectful behavior, inappropriate personnel appearance, substance abuse, insubordination, plagiarism, or repeat disruptive behavior constitutes grounds for disciplinary action and potential relief from the course. AMEDDC&S Reg 351-12 will be posted in a location easily accessible for reference for all soldiers.

2. Physical Training: In accordance with AR 40-501, AR 350-41, AR 351-1, and AMEDDC&S Reg 351-12, soldiers will be evaluated on their state of physical fitness. Soldiers must pass the Army Physical Fitness Test (APFT) in order to earn the 91B10 MOS. The physical fitness test score will not be used to determine academic standing. Physical fitness training will be evaluated and the minimum standards met, as stated in AR 600-9 and FM 21-20, prior to completion of the course.

V. POLICIES/PROCEDURES:

A. Examination Types/Procedures:

1. Types of examinations include written, graded practical exercises, and the Army Physical Fitness Test. A score of 70% is required for written examinations (Phase 1 & 2). A grade of 84% is required for the American Heart Association Cardiopulmonary Resuscitation examination, to meet requirements for CPR certification IAW American Heart Association. standards. Students must receive a "GO" on all graded practical exercises. Students must pass the APFT or have an approved waiver IAW AMEDDC&S Reg 351-12.

2. Material presented in the classroom is tested by Phase; there are seven (7) written tests. The Field Training Exercise(FTX) is not tested. Students apply their knowledge and skills in a field environment.

B. Reteach/Retest:

1. Written examination reteach/retest:

a. Soldiers who fail a written examination will be counseled, receive reteach of tested phase, and be retested. Reteach will generally be held after class hours the same day as the failed examination. Retesting will normally occur before the first class period on the next scheduled class day.

b. Any passing score on a retest will be recorded as a score of 70% with exception to the CPR exam. The CPR exam will be scored as an 84% upon completion of successful retest.

2. Graded Practical Exercise reteach/retest:

a. Graded Practical Exercise will be graded as "GO"/"NO GO".

b. A soldier who fails a Graded Practical Exercise the first time will be counseled, retaught, and retested as soon as possible by an evaluator other than the one who evaluated the student on the initial examination.

c. A soldier who fails a Graded Practical Exercise a second time will be recycled into a traditional 91B10 training group. Soldiers would be treated academically as though they were attempting a traditional 91B10 course for the first time.

d. As an exception, soldiers may be retested a third and final time on any written examination or Graded Practical Exercise. This exception may only be used once and is intended to preserve student enrollment for the good of the Army, the Unit and the Soldier. Both the MT2K Study Training Officer and the Medical Director must agree as to the retention of the soldier in the MT2K Study in this special circumstance.

C. Student Counseling.

1. Students will receive academic counseling, to include extra counseling when needed, and will be referred to the Senior Instructor and the Training Officer for unusual or more difficult problems.

2. Students will meet with their instructors a minimum of three times; initial (during first week of cycle), mid-cycle, and end of course. Additional counseling will be provided for each written or performance failure and as an individual problem occurs.

3. Routine counseling will be documented on AHS Form 123-R (Record of Student Counseling) and AHS Form 123-1R (Continuation Sheet) IAW AHS Reg 351-18.

4. Initial counseling will consist of a discussion of the following areas.

a. The Privacy Act Statement.

b. Purpose of and elements involved in student counseling IAW AR 340-21.

c. MT2K study participation

d. Relief and recycle.

e. Role of the instructor as evaluator as prescribed by AR 623-1.

f. Standards of Conduct.

D. Grading.

1. Soldiers must pass each written examination with a 70%. A pass rate of 84% is required for the CPR examination. Students must receive a "GO" on all Graded Practical Exercises. The Academics Standards Office, 232nd Medical Battalion, maintains a cumulative grade point average (GPA) for each student.

2. The NREMT examination will be administered to all students participating in the MT2K study; however, passing this examination is not a requirement for successful course completion .

3. Students are rank ordered based on each individual cumulative grade point average.

E. Probation. There is no "probation period" in effect for the 91B10 course. The company instructors assist students who are passing with minimal scores and require extra instruction or request additional study time.

F. Student Recycle/Relief. Students will be relieved from the 300-91B10 (MT2K Study) Medical Specialist Course for not achieving non-academic course standards. Students who do not meet academic course standards will be recycled into a traditional 91B10 Medical Specialist Course without penalty to the student. Students recommended for recycle will be counseled by their respective Senior Instructor, Drill Sergeants, Training Officer, Company Commander, Program Manager, and Battalion Commander. Academic reports for recycle soldiers will be forwarded to the receiving 300-91B10 traditional training unit for transition purposes only.

1. Soldiers meeting any of the following criteria will be recommended for recycle into a traditional 300-91B10 Medical Specialist Course without penalty to the student:

a. A total of two written test failures during the course.

b. Two time failures of any one written test.

c. Two time failures of any Graded Practical Exercise.

2. Soldiers can be recommended for recycle based on academic and non-academic deficiencies due to extended absences for reasons of personal illness, emergency leave etc. As recommended by the student's chain of command, a student can be recycled into a traditional 91B10 Medical Specialist Course due to academic deficiencies. A recycle recommendation is normally based on the student's attitude, performance level, study habits, and determination to graduate.

3. Soldiers will be placed in traditional 91B10 training if six (6) consecutive hours of didactic training are missed, or one Graded Practical Exercise.

VI. SPECIAL RECOGNITION FOR STUDENTS. Soldiers meeting established criteria IAW AHS Reg 351-10 may be selected for academic honors. Academic recycles will not be eligible for academic honors.

A. Honor Graduate:

1. Be in top 5% of the graduating class.

2. Achieve a minimum cumulative GPA for the course of 90%.

3. Receive a first time "GO" on all Graded Practical Exercises and written examinations.

4. Pass the NREMT examination.

5. Meet height/weight standards IAW AR 600-9.

6. Pass the initial record APFT or possess an approved waiver IAW AR 350-41 and AMEDDC&S Reg 351-12.

7. Have no adverse counseling statements or disciplinary actions.

8. Be recommended in writing by an instructor from the student's assigned academic team.

B. Distinguished Honor Graduate. To be selected as Distinguished Honor Graduate, a soldier must have a minimum cumulative Grade Point Average (GPA) of 95%, and be Honor Graduate with the highest cumulative GPA. In the event of a tie, the NREMT examination score will be the tie-breaker. Due to the requirement for 95% GPA, not all classes will have a Distinguished Honor Graduate.

VII. ELIGIBILITY FOR DIPLOMAS: Diplomas will be issued only to students who have graduated from the 91B10 course. In order to graduate, a student must meet all course requirements as defined in the Student Evaluation Plan.

VIII. PROCEDURES FOR ARMY STUDENTS TO OBTAIN DOCUMENTATION OF ACADEMIC COMPLETION:

A. The American Council on Education (ACE) evaluates all resident and nonresident AHS courses in terms of academic credit. AR 621-5 provides for soldiers to receive transcripts documenting of their military training and experience, along with the recommended college credit. Soldiers seeking academic recognition for AHS courses will furnish documents specified in the ACE Guide to the civilian school(s) from which they want credit IAW AR 621-5. Civilian schools decide on acceptance of ACE credit recommendations and hours to be credited. Army Education Center personnel will assist soldiers in obtaining recognition from civilian schools.

B. The Education Services Officer will assist enlisted members, with a basic active service date on/or after 1 October 1981, in completing DA Form 5454-R, Request for Army/American Council on Education Registry Transcript (AARTS). The AARTS transcript is the only official Army transcript and may be obtained by mailing the completed DA Form 5454 to: AARTS Operations Center, ATTN: ATZL-GPE-A, 415 McPherson Avenue, Fort Leavenworth, KS 66027-1371.

C. Soldiers who do not fit the above category, should contact the Education Services Officer who will assist them in preparing alternative documentation, which is the DD Form 295, Application for the Evaluation of Learning Experiences During Military Services

IX. ACADEMIC EVALUATION REPORTS (AER): Students participating in the MT2K Study will not receive an AER.

APPENPIX O

232nd MED BN Control Group Student Evaluation Plan (SEP)

[Intentionally left blank]

300-91B10, Medic Training 2000 Study, Course

Meets All of the Requirements

I
I
I
Pass CPR Certification (84%>)
I
I
I
Receive a "GO" on all Graded Practical Exercise
I
I
I
Pass APFT / or Approved Waiver
I
I
I
I
I
Meet Height & Weight Standards
I
I
I
I
I
Take the EMT-B Examination (NREMT)
I
I
I
Award of MOS 91B10

Does Not Meet All Requirements

I
I
I
Scores Less than 84% on CPR
Certification on initial test
or one retest

=> Recycle into
traditional
91B10 training

I
I
I
2 total written Failures or
(3 initial + 2 retests)
I
I
I

=> Recycle into
traditional
91B10 training

I
I
I
2 total failures of a Graded
Practical Exercises (GPE)
I
I
I

=> Recycle into
traditional
91B10 training

I
I
I
Fail to meet Height & Weight Standards
and / or Fail APFT
I
I
Relief / Recycle into traditional 91B10
training

U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL

CENTER BRIGADE

232D MEDICAL BATTALION

STUDENT EVALUATION PLAN

300-91B10

MEDICAL SPECIALIST

[illegible] A. [illegible]
[illegible] AN
Program Manager

[illegible]
[illegible]
Commanding [illegible]

[illegible]
[illegible]
[illegible]

[illegible]

U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL
232d Medical Battalion
Fort Sam Houston, Texas 78234-6115

MCCS-AC

1 October 1995

STUDENT EVALUATION PLAN
300-91B10, MEDICAL SPECIALIST COURSE

I. PREFACE: The 300-91B10, Medical Specialist Course, is conducted at Fort Sam Houston, TX, by the 232nd Medical Battalion, U.S. Army Medical Department Center and School (AMEDDC&S). This ten-week course is designed to train enlisted soldiers to perform emergency medical treatment and routine patient care duties in field units and military treatment facilities of the Active Army and the Reserve Components.

II. PURPOSES OF EVALUATION: Soldiers in the 300-91B10, Medical Specialist Course, receive structured evaluation. The purposes of evaluation include, but are not limited to the following:

A. Ensure that graduates meet stated requirements for the award of MOS 91B;

B. Measure the degree to which the soldier has achieved the stated course objectives;

C. Monitor and provide feedback on individual academic progress;

D. Provide feedback to the Course Director on the effectiveness the effectiveness of instruction and the instructional material;

E. Identify soldiers who meet the 232nd Medical Battalion examination requirements for National Registry of Emergency Medical Technician (NREMT) testing;

F. Rank soldiers in order of academic performance for the determination of academic honors.

III. COURSE DESCRIPTION:

A. COURSE NUMBER AND TITLE: 300-91B10, Medical Specialist Course

B. SCOPE:

1. This evaluation plan establishes policies, assigns responsibilities, and prescribes procedures for the execution of the 300-91B10, Medical Specialist Course. These policies, procedures, and responsibilities shall apply to members of all U.S. military services participating in the training program.

2. The Medical Specialist Course is 10 weeks (50 training days) in length. The core curriculum provides an introduction to fundamental military skills and knowledge involving medical treatment on and off the battlefield.

C. PREREQUISITES:

1. Soldiers entering the 300-91B10, Medical Specialist Course, must meet the following criteria in accordance with (IAW) DA PAM 351-41.

a. Be a member of Active Army, Reserve Components or National Guard.

b. Meet fitness and weight standards IAW AR 40-501 for soldiers with less than six months active service and IAW AR 600-9 for those with six months or more of active service.

c. Meet physical and mental standards IAW AR 611-201.

2. A security clearance is not required for entry into or, completion of this course.

D. SERVICE OBLIGATION: Minimum time in service remaining at the end of the course for active duty personnel must be at least 10 months; service remaining for USAR is IAW AR 135-200 and for ARNG IAW NGR 350-1.

IV. ACADEMIC STANDARDS: This course consists of twelve modules, lettered sequentially from A through I. Soldiers will complete all written and performance (hands-on) examinations under specific conditions and be evaluated by the established standards of performance. Examination questions and performance/hands-on tests are derived from module objectives. Course modules are as follows:

A. Basic Medical Subjects

B. Anatomy and Physiology

C. Cardiopulmonary Resuscitation (CPR) (American Heart Association Provider Level C Course).

D. Emergency Medical Technician (EMT) Subjects

E. Basic Nursing Skills

F. Invasive procedures

G. Field Medical Care

H. Nuclear, Biological, Chemical (NBC)

I. Field Training Exercise (FTX)

V. OBJECTIVES: Terminal Learning Objectives (TLOs) are delineated in the 300-91B10 Program of Instruction (POI). Both TLOs and Enabling Learning Objectives (ELOs) are annotated in the lesson plans and student mimeos.

VI. STANDARDS FOR COURSE COMPLETION:

A. AWARD OF MILITARY OCCUPATIONAL SPECIALTY (MOS) 91B. Soldiers must meet all of the following requirements for course completion and award of the 91B MOS:

1. Earn 70% of the maximum points assigned to each written examination with the exception of Module C, Cardiopulmonary Resuscitation;

2. Earn 84% of the maximum points assigned to Module C written examination;

3. Obtain CPR Course C verification IAW American Heart Association standards;

4. Receive a "GO" on all performance/hands-on tests;

5. Pass the Army Physical Fitness Test or have an approved waiver IAW Reg AR 600-9.

6. Meet the height and weight standards or have an approved waiver IAW AMEDDC&S Reg 351-12;

VII. NATIONAL REGISTRY OF EMERGENCY MEDICAL TECHNICIANS (NREMT):

A. In order to meet Battalion requirements for taking NREMT written examination, soldiers must achieve all of the following:

1. A minimum cumulative grade point average (GPA) of 94% at the end of Module D-4 (GPAs of 87.45% and above will be rounded up when determining eligibility);

2. Current CPR Certification, Provided Level ...

3. "GO" on all EMT hands-on skills, with no more than ... initial performance/hands-on tests "NO GOs"

4. No written examination failures; with no "NO GO" on hands-on tests

B. PHYSICAL FITNESS TRAINING:

1. In accordance with AR 350-41, AR 351-1, AHS Regulation 351-11 and AMEDDC&S Regulation 351-2, soldier will be evaluated on state of physical fitness. Students must pass the APFT in order to obtain the 91B MOS.

2. Soldiers are expected to participate in a regular physical fitness training program.

3. This program will include two hours of academic instruction on total fitness.

4. The physical fitness test is not an academic subject and the test score will not be used to determine academic standing.

5. Physical fitness training will be evaluated and the minimum standards met as stated in AR 600-9, and FM 21-20 prior to successful completion of the course.

C. National Registry standards for certification as an Emergency Medical Technician Basic (EMT-B) require a score of 70% or above on the written examination. Certification as an EMT-B will be awarded by the NREMT upon successful completion and verification of the written examination, performance/hands-on tests, and clinical rotation. The NREMT recognizes the FTX as meeting requirements for a clinical rotation.

1. A total of five written tests failures.

2. Triple failure of any written test.

3. Triple failure on any one performance test.

D. NREMT certification is NOT a requirement for course completion or award of MOS 91B.

VIII. EXAMINATION PROCEDURES:

A. ACADEMIC RELIEF: Soldiers meeting any of the following criteria will be recommended for relief from the course:

1. A total of five written test failures,

2. Triple failure of any written test,

3. Triple failure of any one performance test.

B. WRITTEN EXAMINATION RETEACH/RETEST:

1. Soldiers who fail a written examination will be counseled, receive reteach of tested modules, and be retested. Reteach will generally be help after class hours the same day as the failed examination. Retesting will generally occur before the first class period on the next scheduled class day.

2. A passing score on a retest will be recorded as a 70% (84% for Module C).

C. PERFORMANCE TESTING/RETEACH/RETEST:

1. Performance/hands-on tasks will be graded as "GO"/"NO GO"

2. A soldier who fails a performance/hands-on test the first time will be counseled, retaught, and retested as soon as possible by an evaluator other than the one who evaluated the student on the initial examination.

3. A soldier who fails a performance/hands-on test the second time will be counseled by the SI or the TO, retaught, and retested a second time by a staff member from the EMT Office. The final retest should be the following day, or the following workday if this day falls on a weekend. A soldier who fails three consecutive Performance/hands-on tests will be recommended for recycle.

IX. STANDARDS OF CONDUCT:

A. Soldiers are expected to adhere to the standards of conduct outlined in AMEDDC&S Reg 351-12. Violation of these standards by actions such as cheating, forgery, disrespectful behavior, inappropriate personal appearance, substance abuse, insubordination, plagiarism, or repeated disruptive behavior constitutes grounds for disciplinary action and potential relief from the course.

B. AMEDDC&S Reg 351-12 will be posted in a location easily accessible for reference for all soldiers.

X. ACADEMIC ACTIONS.

A. STUDENT COUNSELING:

1. Students will receive academic counseling, to include extra counseling when needed, and will be referred to the Senior Instructor or Training Officer for unusual or more difficult problem.

2. Students will meet with their instructors a minimum of three times: initial (during first week of cycle), mid-cycle, and end of course. Additional counseling will be provided for each written or performance failure and as individual problems occur.

3. Routine counseling will be documented on AHS Form 123-R (Record of Student Counseling) and AHS Form 123-1R (Continuation Sheet) IAW AHS Reg 351-18.

4. Initial counseling will consist of a discussion of the following areas:

   a. The Privacy Act Statement

   b. Purpose of and elements involved in student counseling IAW AR 340-21

   c. Relief and recycle

   d. Role of the instructor as evaluator as prescribed by AR 623-1

   e. Standards of Conduct

B. RECYCLE/RELIEF:

1. Students may be recycled or relieved from the 300-91B10 Medical Specialist Course for academic or nonacademic reasons. All recycle and relief actions will be accomplished IAW AMEDDC&S Reg 351-12. (See Annex A-2 and A-3.)

2. Academic reports for recycled soldiers will be forwarded to the gaining company and will be included in the ongoing performance record for the soldier.

3. Accelerated students will not be eligible to compete for academic honors and will be informed of this restriction prior to initiation of acceleration request.

C. COURSE ACCELERATION: (LATER DELETED)

1. Soldiers who are currently NREMT certified may request acceleration past the EMT portion of the course; students requesting acceleration must provide a valid NREMT certification card to the company operations sergeant. Academic Standards staff will complete required documents.

2. Soldiers granted acceleration must complete Module A, B, and C prior to being accelerated.

3. Accelerated students will NOT be eligible to compete for academic honors, and will be informed of this restriction prior to initiation of acceleration request.

D. INTERNATIONAL MILITARY STUDENTS: Standards for International Military Students will be implemented IAW AR 12-15, AMEDDC&S Policy Letter dated 9 April 1991, and subsequent policy changes. All actions concerning International Military Students will be coordinated with the International Military Student Office IAW AMEDDC&S Reg 351-12.

XI. STUDENT RANKING AND GRADING SYSTEM:

A. ACADEMIC HONORS: Soldiers meeting established criteria IAW AHS Reg 351-10 may be selected for academic honors. Academically-recycled soldiers will not be eligible for academic honors.

B. HONOR GRADUATE: To be selected for Honor Graduate status a soldier must meet all of the following requirements:

1. Be in the top 5% of the graduating class

2. Achieve a minimum cumulative GPA for the course of 85%

3. Receive a "GO" on all initial performance examinations

4. Pass the NREMT examination

5. Meet height/weight standards IAW AR 600-9

6. Pass the initial record APFT or possess an approved waiver

7. Have no adverse counseling statements or disciplinary actions

8. Be recommended in writing by an instructor from the student's assigned academic team

D. DISTINGUISHED HONOR GRADUATE: To be selected as Distinguished Honor Graduate, a soldier must have a minimum cumulative GPA of 95%, <u>and</u> be the Honor Graduate with the highest cumulative GPA. In the event of a tie, the NREMT examination score will be the tie breaker. Due to the requirement for a 95% GPA, not all classes will have a Distinguished Honor Graduate.

XI. TRANSCRIPTS:

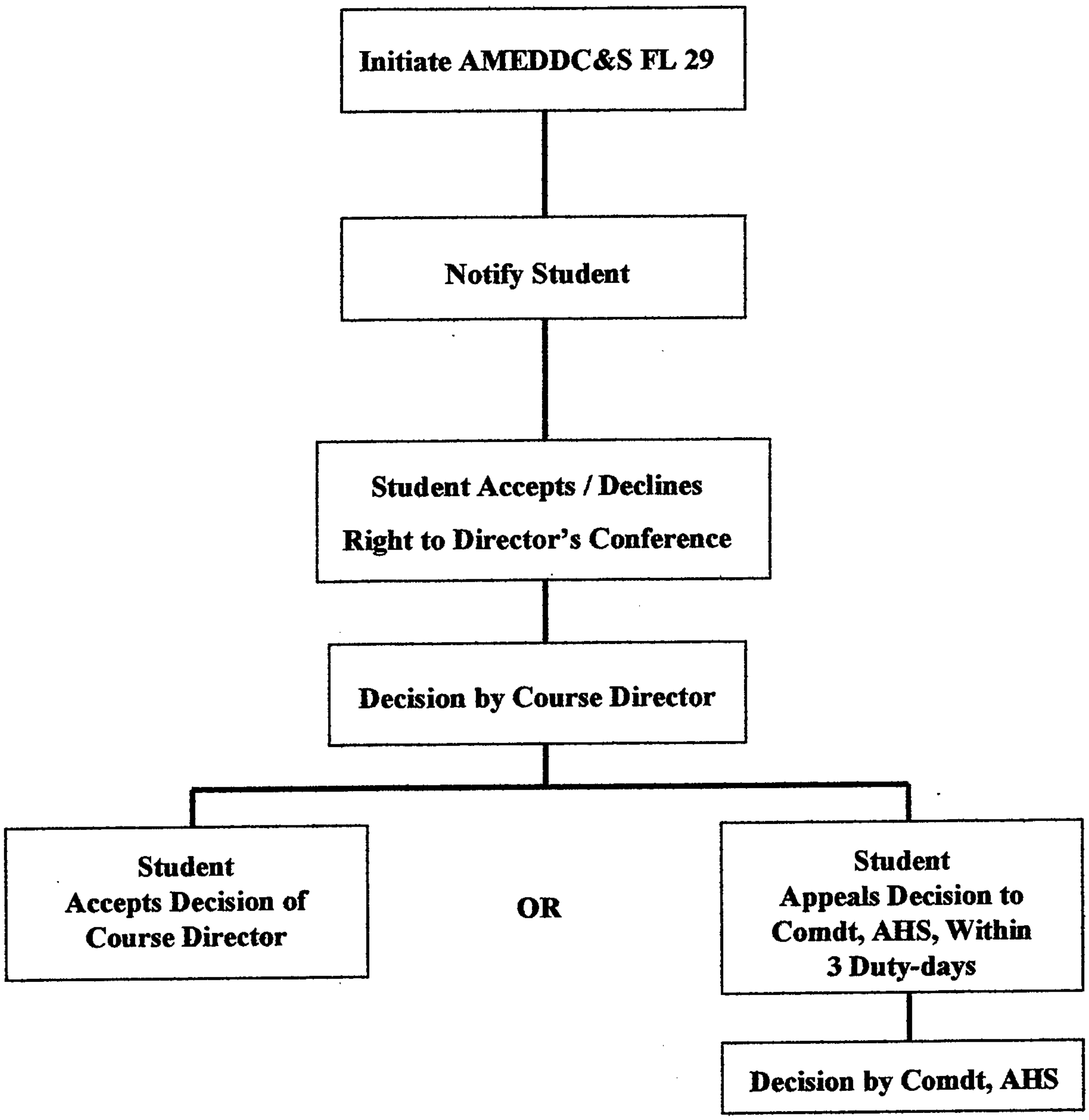
Transcripts will be issued only to students who have graduated from scheduled courses. In order graduate, a student must meet all course requirements as defined in the Student Evaluation Plan which includes academics, physical training, etc.

RELIEF AND CYCLE

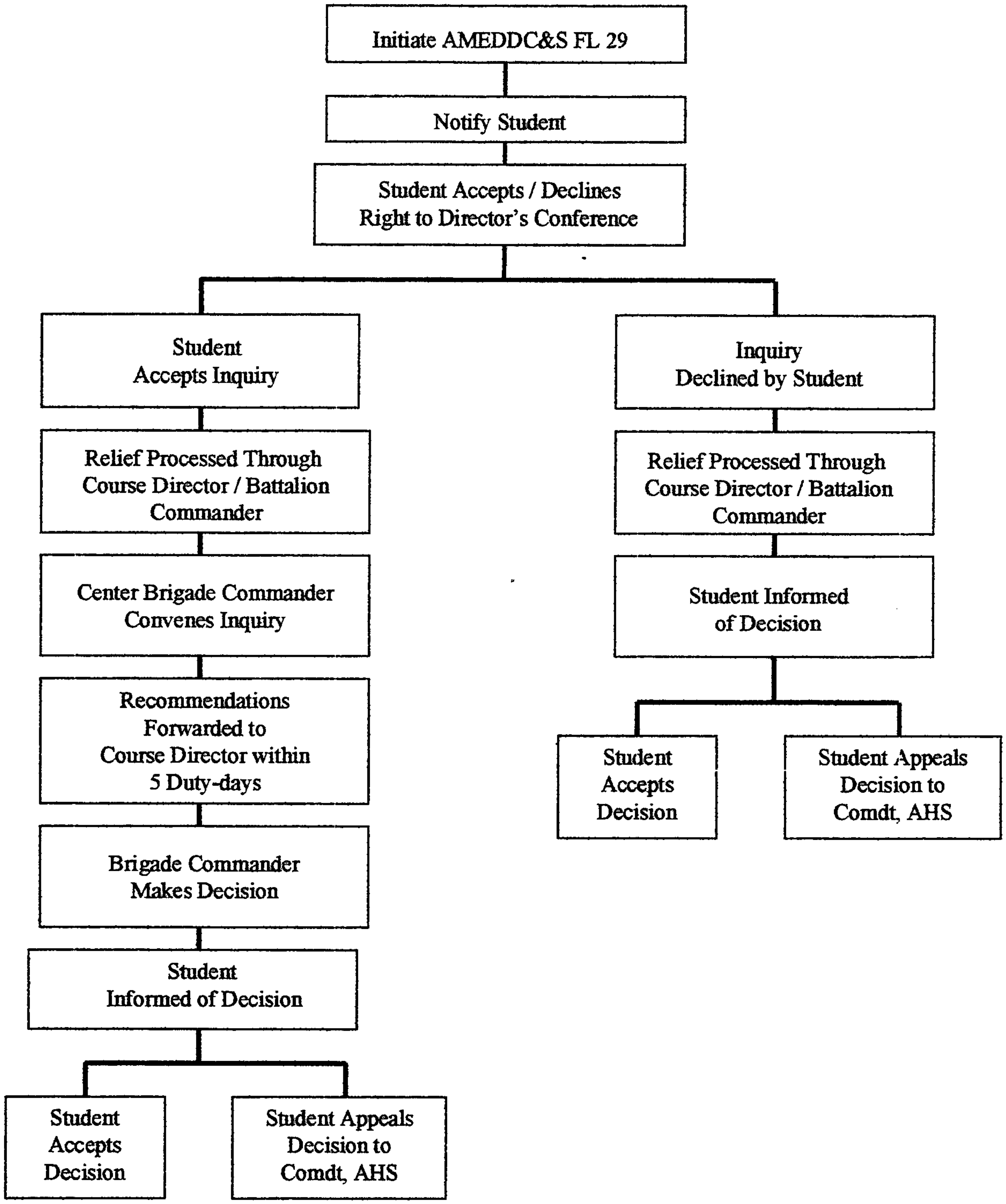
300-91B10 COURSE

Meets all Requirements	Meets all Requirements	Does Not Meet All Requirements	
I	I	I	
I	I	I	
I	I	I	
Pass CPR	Pass CPR	Less than 84% on	
Certification	Certification	Module C	----------Relief
(84% >)	(84% >)	on initial test	from Course
I	I	or retests	
I	I	or retests	
I	I	I	
I	I	5 total written Failures	----------Relief
<u>NREMT</u>	<u>NO NREMT</u>	(3 initial + 2 retests)	from Course
(GPA 88%)	(GPA 70%)	I	
(0-2 initial Hands-	(1-2 initial Hands-	I	
on failures)	on failures)	3 Hands-on failures	----------Relief
(No written test	(1-4 written test	on any one event	from Course
failures)	failures)	I	
I	I	I	
I	I	I	
Pass the NREMT Exam	No EMT	I	
Certified EMT-B	Certification	I	
I	I	I	
I	I	I	
Pass the NREMT Exam	I	I	
Certified EMT-B	I	I	
I	I	I	
I	I	I	
I	I	I	
Award of MOS 91B	Award of MOS 91B	No Award of MOS	
(Graduation)	(Graduation)	Relief from Course	

ACADEMIC RELIEF



NON-ACADEMIC RELIEF



APPENDIX P

Combat Medic Student Evaluation of Training Questionnaire

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STUDENT EVALUATION of 91B10 TRAINING

Direction: Circle the number that best represents your opinion. If a question does not apply to you please circle NA. One good or bad experience should not overly influence your answers. Use your entire experience to Select your answer.

Please take time to answer all questions on this survey. Your feedback is very important for improving the training program.

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NA
COURSE ADMINISTRATION						
1. students were briefed on the course requirements as stated in the student evaluation plan.	1	2	3	4	5	0
2. students read the student evaluation plan.	1	2	3	4	5	0
3. students understood the course requirements and grading policy.	1	2	3	4	5	0
4. students were briefed on the company and brigade policies.	1	2	3	4	5	0
5. chain of command was briefed to students.	1	2	3	4	5	0
6. commander/school's open door policy was explained.	1	2	3	4	5	0
7. students know how to use the school's open door policy.	1	2	3	4	5	0
8. students understood the Equal Opportunity complaint procedures.	1	2	3	4	5	0
9. students understood the Inspector General program.	1	2	3	4	5	0
10. students knew how to use their NCO support channel.	1	2	3	4	5	0
11. students knew how to use their chain of command.	1	2	3	4	5	0
12. cadre was fair in their treatment of all students.	1	2	3	4	5	0
13. command was concerned for students academic success.	1	2	3	4	5	0
14. command displayed a positive example of military bearing and appearance.	1	2	3	4	5	0
15. chain of command took action to correct identified problems and/or concerns.	1	2	3	4	5	0
16. students had their military records for in-processing.	1	2	3	4	5	0
17. students had a copy of their assignment orders during in-processing.	1	2	3	4	5	0
18. students reviewed their GT/ST scores during in-processing	1	2	3	4	5	0
19. I passed my last PT test before leaving my last duty station.	1	2	3	4	5	0
20. In-processing procedures were satisfactory.	1	2	3	4	5	0
21. length of time (10 weeks) was was adequate for this course.	1	2	3	4	5	0
22. out of class help from instructors was readily available	1	2	3	4	5	0
23. conflict existed between medic instructors and drill instructors.	1	2	3	4	5	0
24. students were treated fairly and with equality regardless of race, nationality or gender.	1	2	3	4	5	0

STUDENT EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NA
25. a good balance existed between soliderization more than academics	1	2	3	4	5	0
26. there was a good balance between soldierization and academics.	1	2	3	4	5	0
27. course emphasized academics more than solderization	1	2	3	4	5	0
28. drill sergeants wee positive role models about being a soldier.	1	2	3	4	5	0
29. instructors were positive role models concerning a medic.	1	2	3	4	5	0
30. instructors and drill sergeants were concerned about students academic success as well as professionalism as a soldier	1	2	3	4	5	0
31. fraternization between cadre and students occurred during the course.	1	2	3	4	5	0
32. academic counseling contributed to students success in passing the course.	1	2	3	4	5	0
33. chaplains were available for counseling	1	2	3	4	5	0
34. PT schedule helped students meet army PT requirements.	1	2	3	4	5	0
HANDS-ON						
35. equipment for hands-on lab were adequate for students to practice at least twice.	1	2	3	4	5	0
36. supplies for hands-on lab were adequate for students to practice at least twice.	1	22	3	4	5	0
37. hands-on lab helped students gain confidence in skill performance.	1	2	3	4	5	0
38. hands-on lab was a realistic experience.	1	2	3	4	5	0
39. during hands-on lab students practiced the skill at least twice.	1	2	3	4	5	0
40. hands-on lab helped students perform the skill again.	1	2	3	4	5	0
41. students used hands-on skill sheet with each skill I learned.	1	2	3	4	5	0
42. instructors spent enough time to coach and supervise students practicing their hands-on skills in lab.	1	2	3	4	5	0
43. instructors divided lab practice time among all students in hands-on lab.	1	2	3	4	5	0
44. instructors held students attention during hands-on lab.	1	2	3	4	5	0
45. instructors encouraged questions in hands-on lab	1	2	3	4	5	0
46. students had enough time to practice in hands-on lab	1	2	3	4	5	0
47. FTX experience was realistic	1	2	3	4	5	0
48. students had enough time to practice skills twice during FTX	1	2	3	4	5	0
49. FTX experience prepared students for a 91B10 assignment	1	2	3	4	5	0
50. equipment for FTX was satisfactory.	1	2	3	4	5	0
51. supplies for the FTX were satisfactory.	1	2	3	4	5	0

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NA
TESTING						
52. time allowed for written tests was satisfactory	1	2	3	4	5	0
53. content taught in class appeared on the written test	1	2	3	4	5	0
54. after taking written test instructors went over the test and students knew exactly what questions they missed and why they missed them	1	2	3	4	5	0
55. time allowed for hands-on tests was satisfactory	1	2	3	4	5	0
56. hands-on test were graded according to the items on skill sheets	1	2	3	4	5	0
57. grading of hands-on tests were consistent between instructors	1	2	3	4	5	0
58. re-testing helped students pass the course.	1	2	3	4	5	0
INSTRUCTION						
59. textbook and handouts were consistent with information received in class by the instructors	1	2	3	4	5	0
60. instructors stated class objective before starting class.	1	2	3	4	5	0
61. amount of tune spent on each subject was satisfactory	1	2	3	4	5	0
62 too much time was spent in lecture	1	2	3	4	5	0
63. too much time was spent in small group activities.	1	2	3	4	5	0
64. color slides helped students understand topics taught.	1	2	3	4	5	0
65. overhead transparencies helped students understand topics taught.	1	2	3	4	5	0
66. computer simulation helped students understand topics taught.	1	2	3	4	5	0
67. video tapes helped students understand topics taught	1	2	3	4	5	0
68. instructors asking questions helped students understand topics taught.	1	2	3	4	5	0
69. instructors use of scenarios helped students understand topics taught.	1	2	3	4	5	0
70. instructors use of lecture helped students understand topics taught.	1	2	3	4	5	0
71. adequate supply of written course material were available to students.	1	2	3	4	5	0
72. written materials were readable.	1	2	3	4	5	0
INSTRUCTORS (what is your opinion regarding your group of 91B10 instructors?)						
73. instructors suggested specific ways students could improve on performance.	1	2	3	4	5	0
74. instructors were helpful when students had problems understanding course content	1	2	3	4	5	0
75. instructors explained how class content would relate to medic's job.	1	2	3	4	5	0
76. instructors stimulated interested in the course.	1	2	3	4	5	0
77. instructors held students attention in class.	1	2	3	4	5	0
78. instructors encourage questions in class	1	2	3	4	5	0

STUDENT EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	N/A
INSTRUCTORS (what is your opinion regarding your group of 91B10 instructors)						
79. instructors treated students as adults	1	2	3	4	5	0
80. instructors taught students to evaluate their own performance.	1	2	3	4	5	0
81. instructors treated students in a respectful manner.	1	2	3	4	5	0
82. instructors handled problems and/or concerns in a tactful manner.	1	2	3	4	5	0
INTEGRATION						
83. students were kept informed on their progress in the course.	1	2	3	4	5	0
84. ambulance rotation helped students gain confidence with patients and EMT skills.	1	2	3	4	5	0
85. emergency department rotation helped students gain confidence with patients and EMT skills.	1	2	3	4	5	0
86. students could perform tasks taught on a casualty without harming that person.	1	2	3	4	5	0
87. computer assignments helped students gain confidence with computer skills.	1	2	3	4	5	0
OTHER						
88. evening study period was helpful in understanding the course materials.	1	2	3	4	5	0
89. evening study period was time well spent	1	2	3	4	5	0
90. students received feedback frequently and knew how well they were doing during the course.	1	2	3	4	5	0
91. students felt comfortable asking instructors questions in class	1	2	3	4	5	0
92. students communicated with other students in class.	1	2	3	4	5	0
93. students communicated with other students in small groups	1	2	3	4	5	0
94. students could approach the drill sergeants with personal problems.	1	2	3	4	5	0
95. good communications existed between the instructors, drill sergeants and unit leaders	1	2	3	4	5	0
96. students were able to understand the instructors vocabulary.	1	2	3	4	5	0
STUDENTS (what is your opinion regarding your class of students?)						
97. I am confident I can perform the skills required of a military medic.	1	2	3	4	5	0
98. I am confident I can perform the skills required of a soldier.	1	2	3	4	5	0
99. I am confident I can perform casualty assessment proficiently.	1	2	3	4	5	0
100. I am confident I can perform airway skills proficiently.	1	2	3	4	5	0
101. I am confident I can start an IV proficiently.	1	2	3	4	5	0
102. I am confident I can administer IV fluids proficiently.	1	2	3	4	5	0
103. I am confident I can control bleeding proficiently.	1	2	3	4	5	0

STUDENT EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	N/A
STUDENTS (what is your opinion regarding your class of students?)						
104. I am confident I can manage an NBC casualty proficiently.	1	2	3	4	5	0
105. students had the opportunity to study at least one hour each evening during the week.	1	2	3	4	5	0
106. we had the opportunity to study at least two hours each weekend.	1	2	3	4	5	0
107. enough time was provided so students could take care of personal business	1	2	3	4	5	0
108. living conditions on post were satisfactory.	1	2	3	4	5	0
109. students felt secure in the living environment.	1	2	3	4	5	0
110. belongings were safe in barracks.	1	2	3	4	5	0
111. students were satisfied with the health care received at the Troop Medical Clinic	1	2	3	4	5	0
112. fire watch interfered with my performance in the course	1	2	3	4	5	0
113. CQ interfered with performance in the course	1	2	3	4	5	0
114. barracks cleaning and inspections interfered with performance during the course.	1	2	3	4	5	0
115. formations interfered with performance in the course.	1	2	3	4	5	0
116. inspections interfered with performance in the course.	1	2	3	4	5	0
117. personal emergencies interfered with performance in the course.	1	2	3	4	5	0
118. students had the opportunity to get seven hours of sleep a night.	1	2	3	4	5	0
119. students had enough sleep to stay awake in the class.	1	2	3	4	5	0
120. students had enough sleep to stay awake during hands-on lab	1	2	3	4	5	0
121. students found the course challenging	1	2	3	4	5	0
122. course met students expectations	1	2	3	4	5	0
123. my educational background was adequate for the level of information presented in the course.	1	2	3	4	5	0
124. number of students in hands-on lab group was too large.	1	2	3	4	5	0
125. students felt intimated in class	1	2	3	4	5	0
126. students felt intimated in lab.	1	2	3	4	5	0
127. students felt intimated in study hall.	1	2	3	4	5	0
128. students felt intimated in FTX	1	2	3	4	5	0
129. If I had it to do all over again I would take this course	1	2	3	4	5	0
130. I learned many important and useful skills in this course.	1	2	3	4	5	0

STUDENT EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	N/A
131. I would recommend this course to others.	1	2	3	4	5	0
132. I feel prepared to be a medic in a hospital.	1	2	3	4	5	0
133. I feel prepared to be a medic in a combat unit.	1	2	3	4	5	0
134. I understand I will continue to learn about information and skills presented in this course long after graduation.	1	2	3	4	5	0
135. as a member of the medical team I have responsibility to continue my training	1	2	3	4	5	0
136. as a member of the medical team I must stay competent in my EMT skills.	1	2	3	4	5	0
137. amount of responsibility given to prior service students is reasonable.	1	2	3	4	5	0
138. prior service students were treated with respect.	1	2	3	4	5	0
PHYSICAL ENVIRONMENT						
139. the classroom was noisy during written exams	1	2	3	4	5	0
140. classroom was noisy during class	1	2	3	4	5	0
141. students had a hard time hearing instructors in class	1	2	3	4	5	0
142. students had a hard time hearing instructors during hands-on lab.	1	2	3	4	5	0
143. room was noisy during hands-on lab.	1	2	3	4	5	0
144. room was noisy during hands-on testing	1	2	3	4	5	0
145. classroom lighting, seating, and temperature were satisfactory.	1	2	3	4	5	0

Demographics will help us to interpret the results from the survey. **Please answer all the items.** Your answers are important and will be kept confidential. Questions related to age, gender, and ethnic identification helps us determine how well those participating in the evaluation represent an entire group of participants.

146. What is your age? _____________
(write on the line)

147. What is your gender? (circle one number)

1. Male
2. Female

148. What is your ethnic identification? (circle one number)

1. African-American
2. Asian-American
3. Caucasian-American
4. Hispanic-American
5. American Indian
6. Other _____________ (write-in)

STUDENT EVALUATION of 91B10 TRAINING

149. What is the **highest** educational level that you have completed? (circle one number)

1. Less than high school
2. High school diploma/GED
3. Some college, no degree
4. Some college, license or certificate
5. Some college, associate's degree (AA, AS, etc.)
6. College, bachelor's degree (BA, BS, BSN, etc.)
7. Graduate college, advanced (MBA, MA, MS, MSN, MPH, etc.)
8. Graduate college, professional (Ph.D, MD, DO, etc.)

150. Indicate your army component. (circle one.)

1. Active duty
2. Army Reserve
3. National Guard
4. Other __________ (write in)

151. Do you have any prior military service? (circle one number)

_____ Active Duty years

_____ US Army Reserve years

_____ National Guard years

152. What branch of service and the number of years served? (circle one and fill in the blank)

1. Army ______ years
2. Air Force ______ years
3. Navy ______ years
4. Marines ______ years

153. Do you have any medical experience obtained outside the military? (circle one number)

1. Yes
2. No

If yes please describe: ____

Social security number will be used to track responses from the schoolhouse to your assignment. Social Security numbers will not be used to report individual responses.

154. Enter your social security number. ___ ___ ___ - ___ ___ - ___ ___ ___ ___

155. List three aspects of the 91B10 course that you would like to see changed? (If more space is needed please write on the back of sheet)

1.

2.

3.

156. List the best three aspects or things about the 91B10 course. (If more space is needed please write on the back of sheet)

1.

2.

3.

Thank you for your participation and time!

APPENDIX Q

Combat Medic Instruction Evaluation of Training Questionnaire

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INSTRUCTOR EVALUATION of 91B10 TRAINING

Direction:

Circle the number that best represents your opinion. Please complete all questions. One particularly good or bad experience should not overly influence your answers. Use your entire experience to guide your responses. If you would like to add specific comments please place the question number and response on the back of the sheet.

One of the major sources for the improvement in a training program is instructor feedback. Your feedback is very important for improving the training program.

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NA
COURSE ADMINISTRATION						
1. course standards produced proficient medics for the Army.	1	2	3	4	5	0
2. fifty percent of students pass the course were proficient in life-saving skills.	1	2	3	4	5	0
3. the length of time (10 weeks) was adequate for this course.	1	2	3	4	5	0
4. time allotted for ambulance rotation was sufficient.	1	2	3	4	5	0
5. time allotted for emergency department rotation was sufficient.	1	2	3	4	5	0
6. course content was organized.	1	2	3	4	5	0
7. relationship between the cadre and command was satisfactory.	1	2	3	4	5	0
8. there was good balance between soldierization and academics.	1	2	3	4	5	0
9. too much emphasis was placed on soldierization.	1	2	3	4	5	0
10. too much emphasis was placed on academics.	1	2	3	4	5	0
11. conflict exist between medic and drill instructors.	1	2	3	4	5	0
12. there was good communication between the instructors, drill sergeants and unit leadership.	1	2	3	4	5	0
13. course needed ambulance and emergency department rotations so students can get actual patient experience.	1	2	3	4	5	0
14. course emphasized the combat medics' role in a TO&E unit.	1	2	3	4	5	0
15. academic counseling was beneficial for students.	1	2	3	4	5	0
16. fraternization between cadre and student(s) occurred during the course.	1	2	3	4	5	0
HANDS-ON						
17. students answered questions in hands-on lab.	1	2	3	4	5	0
18. students actively participated in hands-on lab.	1	2	3	4	5	0
19. use of skill sheets during hands-on practice helped students learn the steps of the skill.	1	2	3	4	5	0
20. students-to-instructor ratio for hands-on lab was satisfactory.	1	2	3	4	5	0
21. equipment/supplies to student ratio for hands-on lab was satisfactory.	1	2	3	4	5	0
22. there was sufficient supplies to practice hands-on skills at least twice.	1	2	3	4	5	0

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INSTRUCTOR EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NA
HANDS-ON						
23. there was sufficient equipment to practice hands-on skills at least twice.	1	2	3	4	5	0
24. students were able to practice hands-on skills at least twice during the lab.	1	2	3	4	5	0
25. the number of students in my hands-on lab groups were too large.	1	2	3	4	5	0
26. FTX was presented in a realistic manner.	1	2	3	4	5	0
27. FTX had satisfactory instructional value.	1	2	3	4	5	0
28. FTX site at Camp Bullis is a satisfactory experience.	1	2	3	4	5	0
29. student-to-instructor ratio for FTX was satisfactory.	1	2	3	4	5	0
30. equipment/supplies to student ratio for the FTX was satisfactory.	1	2	3	4	5	0
31. there was sufficient equipment to make the FTX experience effective for students.	1	2	3	4	5	0
32. there was sufficient supplies to make the FTX experience effective for students.	1	2	3	4	5	0
33. FTX experience at Camp Bullis pulled cognitive and hands-on course content together for students.	1	2	3	4	5	0
TESTING						
34. time allowed for written tests was sufficient.	1	2	3	4	5	0
35. content taught in class appeared on the written tests.	1	2	3	4	5	0
36. written tests evaluated the student mastery of the subject .	1	2	3	4	5	0
37. written tests were fairly graded.	1	2	3	4	5	0
38. after taking a written test, instructors reviewed tests so students knew exactly why questions were missed.	1	2	3	4	5	0
39. re-tests of two or more times resulted in a proficient medic.	1	2	3	4	5	0
40. hands-on tests evaluated student mastery of the skill.	1	2	3	4	5	0
41. sufficient time was allowed for hands-on testing.	1	2	3	4	5	0
42. grading of hands-on tests was consistent among instructors.	1	2	3	4	5	0
43. hands-on tests were graded according to the skill sheets.	1	2	3	4	5	0
INSTRUCTION						
44. students grasped course material quickly.	1	2	3	4	5	0
45. textbook and handouts were consistent with information received in class.	1	2	3	4	5	0
46. time allowed for lectures and hands-on labs were a good balance.	1	2	3	4	5	0
47. student-to-instructor ratio for class was satisfactory.	1	2	3	4	5	0
48. upon graduation, all students were proficient in airway management.	1	2	3	4	5	0
49. upon graduation, all students were proficient in bleeding control.	1	2	3	4	5	0

INSTRUCTOR EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NA
INSTRUCTION						
50. upon graduation, all students were proficient in starting an IV.	1	2	3	4	5	0
51. upon graduation, all students were proficient in giving IV fluids.	1	2	3	4	5	0
52. upon graduation, all students were proficient in the management of a NBC casualty.	1	2	3	4	5	0
53. overhead transparencies in class were an effective way to help students understand topics taught.	1	2	3	4	5	0
54. video tapes in class were an effective way to help students understand topics taught.	1	2	3	4	5	0
55. color slides in class were an effective way to help students understand topics taught.	1	2	3	4	5	0
56. computer simulations in class were an effective way to help student understand topics taught.	1	2	3	4	5	0
57. question-answer format in class was an effective way to help student understand topics taught.	1	2	3	4	5	0
58. scenarios were an effective way to help students understand topics taught.	1	2	3	4	5	0
59. lecture was an effective way to help students understand topics taught.	1	2	3	4	5	0
INSTRUCTORS (what is your opinion regarding your group of 91B20 instructors?)						
60. classroom equipment needed to give class was sufficient.	1	2	3	4	5	0
61. updated videotapes, slides, transparencies, computer simulations to give class were available.	1	2	3	4	5	0
62 being an instructor was a rewarding job.	1	2	3	4	5	0
63. had an opportunity to improve teaching by going to workshops or conferences.	1	2	3	4	5	0
64. being an instructor was a frustrating job.	1	2	3	4	5	0
65. we had adequate time to prepare for classes.	1	2	3	4	5	0
66. if I had to do it over again, I would teach this course.	1	2	3	4	5	0
67. I learned important teaching strategies teaching this section of the 91B10 course.	1	2	3	4	5	0
68. I would recommend teaching this course to others.	1	2	3	4	5	0
69. class objectives were stated before starting class.	1	2	3	4	5	0
70. student's educational background was adequate for the level of information presented in the course.	1	2	3	4	5	0
71. suggested to students specific ways students could improve their performance.	1	2	3	4	5	0
72. encouraged questions in class from students.						
73. explained how course content would relate to their job in the combat environment.	1	2	3	4	5	0

INSTRUCTOR EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	N/A
INSTRUCTORS (what is your opinion regarding your group of 91B20 instructors?)						
74. explained how course content would relate to their job in combat support hospital.	1	2	3	4	5	0
75. explained how course content would relate to their job in operations other than war.	1	2	3	4	5	0
76. explained how course content would relate to their job in an emergency department.	1	2	3	4	5	0
77. explained how course content would relate to their job in an ambulance clinic.	1	2	3	4	5	0
78. explained how course content would relate to their job in an outpatient section.	1	2	3	4	5	0
79. explained how course content would relate to their job in an inpatient ward.	1	2	3	4	5	0
STUDENTS (what is your opinion about a class of students?)						
80. communicated appropriately with instructors.	1	2	3	4	5	0
81. answered questions in class	1	2	3	4	5	0
82. actively participated in class.	1	2	3	4	5	0
83. amount of responsibility given to prior service students was reasonable.	1	2	3	4	5	0
84. prior service students were treated with respect.	1	2	3	4	5	0
85. evening study period reinforced learning.	1	2	3	4	5	0
86. evening study period was a waste of time.	1	2	3	4	5	0
87. were awake in class.	1	2	3	4	5	0
88. were awake in lab.	1	2	3	4	5	0
89. demonstrated self-learning behaviors such as evaluating their hands-on performance and completing assignments on time.	1	2	3	4	5	0
OTHER						
90. instructor's evaluation based on percent of students passed is satisfactory.	1	2	3	4	5	0
91. the job painted by recruiters positively reflects the student's interest in the course.	1	2	3	4	5	0
92. EMT content should be removed from the course.	1	2	3	4	5	0
93. instructors should have their classes evaluated by students and student evaluations should be incorporated into instructor's rating system.	1	2	3	4	5	0
PHYSICAL ENVIRONMENT						
94. was satisfactory for classroom instruction?	1	2	3	4	5	0
95. classroom was noisy during written exams.	1	2	3	4	5	0
96. classroom was noisy during class.	1	2	3	4	5	0
97. students had a hard time hearing instructor in class.	1	2	3	4	5	0
98. was satisfactory for hands-on lab instruction.	1	2	3	4	5	0
99. students had a hard time hearing instructors in hands-on lab.	1	2	3	4	5	0

INSTRUCTOR EVALUATION of 91B10 TRAINING

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NA
PHYSICAL ENVIRONMENT						
100. room was noisy during hands-on lab.	1	2	3	4	5	0
101. room was noisy during hands-on testing.	1	2	3	4	5	0
102. classroom lighting, seating, and temperature were satisfactory.	1	2	3	4	5	0

Demographics will help us to interpret the results from the survey. **Please answer all the items.** Your answers are important and will be kept confidential. Some items like age, gender, and ethnic group help us describe how well those participating in the evaluation represent an entire group of participation.

103. What is your age? ____________
(Write on the line)

104. What is your gender? (Circle one number)

1. Male
2. Female

105. What is your ethnic identification? (Circle one number)

1. African-American
2. Asian-American
3. Caucasian-American
4. Hispanic-American
5. American Indian
6. Other ________________________________ (write-in)

106. What is the **highest** educational level that you have completed? (Circle one number)

1. Less than high school
2. High school diploma/GED
3. Some college, no degree
4. Some college, license or certificate
5. Some college, associate's degree (AA, AS, etc.)
6. College, bachelor's degree (BA, BS, BSN, etc.)
7. Graduate college, advanced (MBA, MA, MSN, MPH, etc.)
8. Graduate college, professional (Ph.D, MD, DO, etc.)

107. Indicate your army component. (Circle one number)

1. Active duty
2. Army Reserve
3. National Guard
4. Other ________________________________ (write in)

INSTRUCTOR EVALUATION of 91B10 TRAINING

108. What is your length of service?

_____ Active Duty years

_____ USAR years

_____ NG years

109. What is your grade? (Circle one number)

1.	E-4	**7.**	O2
2.	E-5	**8.**	O3
3.	E-6	**9.**	O4
4.	E-7	**10.**	O5
5.	E-8	**11.**	O6
6.	E-9		

110. What is your PMOS? ____________________ (write-in)

111. How long have you been an EMT?

_____ Civilian Years
(write-in)

_____ Military years
(write-in)

112. What is your current level of EMT practiced?

1. Basic level

2. Intermediate level

3. Paramedic level

4. Other ________________________________ (write-in)

113. How long have you been an EMT instructor? (Circle one number)

1. 2 years or less

2. 3 – 5 years

3. 6 – 9 years

4. 10 years or more

114. How long have you been a 91B10 Instructor at Ft. Sam Houston?

1. 2 years or less

2. 3 – 5 years

3. 6 – 9 years

4. 10 years or more

INSTRUCTOR EVALUATION of 91B10 TRAINING

115. For how many years should an instructor be assigned to the 91B10 course? ____________ years
(write on the line)

116. How long have you worked in a (an):

1. Emergency department ______ year(s)
2. Operational hospital other than the emergency department _______ year(s)
3. Dispensary/troop clinic ______ year(s)
4. Non-divisional TO&E medical unit ______ year(s)
5. Working in a division TO&E unit _______ year(s)
6. Others (Please specify) ______________year(s)
______________ year(s)
______________ year(s)

117. To what type of TO&E units have you been assigned? (Check all that apply)

____ Maneuver/Combat Support battalion

____ Forward main support medical company

____ Main support medical company

____ TO&E hospital

____ Medical evacuation unit (air or ground)

____ Other TO&E _____________________ (write-in)

118. To what type of TDA units have you be assigned? (Check all that apply)

____ Medical center (MEDCEN)

____ Medical activity (MEDDAC)

____ Health clinic and Troop Medical Clinic

____ AMEDD C&S (Academy of Health Science)

____ Other ____ (write-in)

119. How many years of experience have you had as a 91B10 medic instructor? (Circle one number)

1. 2 years or less
2. 3 – 5 years
3. 6 – 9 years
4. 10 years or more

120. Circle your current duty position (Circle one number)

1. Instructor
2. Drill Sergeant
3. Training Officer
4. Civilian Instructor

Social security number will be used to study database to correlate certain group responses at the schoolhouse with supervisor responses at the unit. Social Security numbers will not be used to track nor report your individual responses.

121. Enter your social security number. ___ ___ ___ - ___ ___ - ___ ___ ___ ___.

INSTRUCTOR EVALUATION of 91B10 TRAINING

122. What three aspects of the 91B10 course you teach in are you most proud of? (write on back of sheet if needed)

1.

2.

3.

123. What three aspects of the 91B10 course you teach are you least proud of? (write on back of sheet if needed)

1.

2.

3.

Thank you for your participation and time!

APPENDIX R

Classroom/Laboratory Observation Tool

[Intentionally left blank]

CLASSROOM OBSERVATION CHECKLIST

Observed:

___ **Experimental Military**

___ **Control 232nd**

___ **Number of Instructors Observed During Class**

___ **Number of Students Scheduled for Class**

Date: ____________

Topic: ____________

Class Start Time: ________

Class Stop Time: ______

Number of Students Absent: ____

CLASSROOM OBSERVATION

OBSERVATION	YES	NO	NA
LEAD INSTRUCTOR			
1. reviews class objectives at beginning of class			
2. uses lecture only as a teaching method			
3. uses video tapes only as a teaching method			
4. uses computer simulations only as a teaching method			
5. uses question-answer format only as a teaching method			
6. uses scenarios only as a teaching method			
7. uses the blackboard/whiteboard only as a teaching method			
8. uses overhead transparencies only as a teaching method			
9. uses slides only as a teaching method			
10. gives demonstrations only as a teaching method			
11. uses role playing only as a teaching method			
12. uses group discussion only as a teaching method			
13. uses simulation gaming only as a teaching method			
13. uses combination of methods (lecture, videotape, computer simulation, question-answer format, scenario, role playing, group discussions, simulation gaming) **Circle the methods used.**			
14. does not use inappropriate discipline for a learning environment (i.e. lining soldiers up facing the wall, getting in soldier's face and yelling, embarrassing soldiers during a class, lab, or field activity)			
15. speaks in a monotone voice for 10 minutes or more			
16. reads lecture off lesson plan or outline **(10 minutes or more mark "yes" and less than 10 minutes mark "no" otherwise "NA")**			
17. involves class in topic by using open-ended questions. **If there is class involvement 3 or more times mark "yes" and less than "3" mark "no" otherwise "NA".**			
18. praises or acknowledges students when questions are asked. **If there is 3 or more episodes mark "yes" and less than 3 mark "no" otherwise "NA".**			
19. answers student questions. **If there is 3 episodes or more mark mark "yes" and less than 3 mark "no" otherwise "NA".**			
20. ignores student questions intentionally. **If there is 3 episodes or more mark "yes" and less than 3 mark "no" otherwise "NA".**			

21 ignores student questions accidentally. **If there is 3 episodes or more mark "yes" and less than 3 mark "no" otherwise "NA""**			
22. is comfortable (not on the attack or on guard) when answering questions. **If there is 3 episodes or more mark "yes" and less than 3 mark "no".**			
OBSERVATION	**YES**	**NO**	**NA**
LEAD INTSTRUCTOR			
23. asks questions that require recalling facts. **If there is 3 episodes or more mark "yes" and less than 3 mark "no" otherwise "NA."**			
24. asks questions that require a drill response from class (i.e. do you guys understand this and the response from class is hooah, yes, no) **If there is 3 episodes or more mark "yes" and less than 3 mark "no otherwise "NA."**			
25. asks questions that require respondent(s) to make a decision or judgment. **If there is 3 episodes or more mark "yes" and less than 3 mark "no" otherwise "NA."**			
26. restates student questions so entire class can hear the question. **If there is 3 episodes or more mark "yes" and less than 3 mark "no" otherwise "NA."**			
27. uses tact when handling disruption/discipline issues (i.e. student-teacher disagreements; student-student disagreements; same students monopolizes discussion). **If there is 3 episodes or more mark "yes" and less than 3 mark "no" otherwise "NA."**			
CLASS OF STUDENTS			
28. are awake during class. **If 3 or less sleep episodes mark "yes" more than 3 mark "no" otherwise "NA."**			
29. are standing up or doing push-ups during class. **If 3 or more episodes mark "yes" less than 3 mark "no" otherwise "NA."**			
30. same students respond to majority of questions. **If 3 or more episodes mark "yes" less than 3 mark "no" otherwise "NA."**			
31. interact with other students. **If 3 or more episodes mark "yes" less than 3 mark "no" otherwise "NA."**			
32. interact with instructor (i.e. asks/answers questions, involved in discussion) **. If 3 or more interactions mark "yes"; if less than 3 interactions mark "no" otherwise "NA".**			
PHYSICAL ENVIRONMENT			
33. seating arrangement designed for face-to-face interaction			
34. is noisy			
35. is quiet			
36. is hard to hear the instructor			
37. all lights on, no flickering of lights			
38. is spacious			
39. environmental temperature is comfortable			

Comments:

HANDS-ON SKILL OBSERVATION

Experimental Military Group: ____
Control 232nd Group: ___
Hands-on Skill Lab Observed: ______________________________
Lab Start Time: ______
Lab Stop Time: _______
Location of Lab (Inside/Outside): ________________
Ratio of Instructors to Student: _____
Ratio of Equipment to Student: _____
Ratio of Supplies to Student: _____
Number of student groups in lab: _____
Number of students in a group in lab: ____
Date: __________________

OBSERVATION	**YES**	**NO**	**NA**
LEAD INSTRUCTOR			
1. starts the lab with overview of the lab objectives			
2. demonstrates the skill prior to student practice If Yes ___ **Demonstration start time** ___ **Demonstration stop time** ___ **Distraction Time (Unstructured time, Student No-Contact Time)** ___ **Total Minutes**			
3. uses group walk-through demonstration of skill prior to student practice If Yes ___ **Demonstration start time** ___ **Demonstration stop time** ___ **Distraction Time (Unstructured time, Student No-Contact Time)** ___ **Total Minutes**			
4. breaks students into smaller practice groups			
5. uses scenarios to make practice more realistic			
6. uses video tape to demonstrate skill			
7. monitors student skill practice. **If observed 3 or more times mark "yes" less than 3 mark "no" otherwise "NA."**			
8. answers student questions. **If observed 3 or more times mark "yes" less than 3 mark "no" otherwise "NA."**			
9. is comfortable (not on the attack, or on guard, not posturing) when answering questions. **If observed 3 or more times mark "yes" less than 3 mark "no" otherwise "NA."**			
10. ignores student questions accidentally. **If observed 3 or more times mark "yes" less than 3 mark "no" otherwise "NA."**			
11. ignores student questions intentionally. **If observed 3 or more times mark "yes" less than 3 mark "no" otherwise "NA."**			
12. provides immediate (within 3 minutes) feedback to students about skill performance			
13. uses tact when handling disruption/discipline issues (i.e. student-teacher disagreements; student-student disagreements) **If observed 3 or more times mark "yes" less than 3 mark "no" otherwise "NA."**			

OBSERVATION	YES	NO	NA
LEAD INSTRUCTOR			
14. engages students in skill learning (i.e. performing hands-on skill, student coaching another student, student records student performance, review skill sheet as student performs skill) **If observed 3 or more times mark "yes" less than 3 mark "no" otherwise "NA."**			
CLASS OF STUDENTS			
15. all students perform the skill at least twice during the lab			
16. all students perform the skill once during the lab			
17. half the students practice the skill at least twice during the lab			
18. half the students practice the skill once during the lab			
19. less than half the students practice the skill twice			
20. less than half the students practice the skill once durinig lab			
21. has supplies to perform the skill			
22. has equipment to perform the skill			
23. all students use the skill sheet to perform the skill			
24. half the students use the skill sheet to perform the skill			
25. less than half the students use the skill sheet to perform the skill			
26. all students involved in some aspect of skill (performing skill, coaching student, following along with skill sheet)			
27. half the students involved in some aspect of skill (performing skill, coaching student, following along with skill sheet)			
28. less than half the students involved in some aspect of skill (performing skill, coaching student, following along with skill sheet)			
29. is respectful of other students (i.e. peer feedback, courtesy cooperative). **If 3 or more mark episodes "yes" less than 3 mark "no" otherwise "NA"**			
PHYSICAL ENVIRONMENT			
30. is noisy			
31. is quiet			
32. hard to hear the instructor			
33. environmental temperature is comfortable			
34. is spacious			
34. all lights on, no flickering of lights			

Comments (on back):

COGNITIVE TEST GIVEN IN CLASSROOM OBSERVATION

Experimental group: ___
232nd Control group: ___
Number of Students Taking the Test: ____
Time Given to Take the Test: ___
Topics Test Covered: ________________________
Number of Questions on Test: ______
Number of Proctors Administering the Test: ____
Date: _________________

OBSERVATION	YES	NO	NA
INSTRUCTOR (S)			
1. gives the directions for the test before students start test			
2. spaces students out so they can't look at other's test			
3. announces the time remaining to take the test			
4. writes the test time remaining on the board			
5. is respectful of student			
6. answers student questions within the confines of testing situation			
7. gives students immediate feedback of his test performance (i.e. student writes down his answers on a piece of scratch paper and checks a key in the back of the room)			
8. conducts a review of the test and student must rely on his memory for his answers			
9. uses tact when handling disruption/discipline issues			
PHYSICAL ENVIRONMENT			
10. is noisy			
11. is quiet			
12. environmental temperature is comfortable			
13. is spacious			
14. all lights on, no flickering of lights			

Comments (on back):

[Intentionally left blank]

HANDS-ON SKILL TESTING

Experimental group: ___
232nd Control group: ___
Skill Observed being Tested: ________________________
Time Allotted for Demonstration: _____
Date: ____________________

OBSERVATION	**YES**	**NO**	**NA**
LEAD INSTRUCTOR			
1. gives directions prior to the hands-on skill test			
2. announces the time remaining to demonstrate the skill			
3. is respectful of students (i.e. doesn't embarrass students, not rude, treats soldier like he has life experiences). **If 3 or more events mark "yes" less 3 events mark "no" otherwise "NA."**			
4. uses tact when handling disruption/discipline issues (i.e. testing issues, student-instructor disagreements, student-student disagreements). **If 3 or more events mark "yes" less 3 events mark "no" otherwise "NA."**			
5. uses appropriate discipline for learning situation (i.e. different viewpoints, conflict). **If 3 or more events mark "yes" less 3 events mark "no" otherwise "NA."**			
5. gives immediate test performance feedback			
6. cues or gives suggestions during performance test			
STUDENTS			
7. has supplies to demonstrate the hands-on skill			
8. has equipment to demonstrate the hands-on skill			
9. follows a scenario to demonstrate the hands-on skill			
10. acting as a patient, is given a scenario to create a realistic patient interaction			
11. recite what is on the skill sheet without performing the hands-on skill			
PHYSICAL ENVIRONMENT			
12. is noisy			
13. students standing around			
14. environmental temperature is comfortable			
15. is spacious			
15. all lights are on, no flickering of lights			

Comments:

[Intentionally left blank]

APPENDIX S

Cost Matrix

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Medic Training 2000 Model Schoolhouse Cost Analysis	MT2K	Unit of Issue Price	Cost for 50 Students	Cost for 300 Students
Nonexpendable and Durable Medical Equipment (Training Aids)				
AED Trainer	5	$395.00	$1,975.00	$11,850.00
Cricoid Stick Simulator	6	$193.67	$1,162.00	$6,972.00
Skele-Torso with 2000 stand	1	$2,708.06	$2,708.06	$16,248.36
Advanced Childbirth Simulator Mannequin	5	$500.00	$2,500.00	$15,000.00
CPR/Trauma Mannequin	8	$960.00	$7,680.00	$46,080.00
Choking Mannequin, with T-shirt, Carrying bag	2	$310.00	$620.00	$3,720.00
Child CPR Mannequin	5	$344.66	$1,723.30	$1,723.30
Infant, CPR Mannequin (Baby Crist)	8	0		
Infant CPR Mannequin (Ambu Baby)	5	$370.00	$1,850.00	$11,100.00
Pulse Oximeter, Hand-held	4	$629.00	$2,516.00	$15,096.00
Instant Heat Sealer	shared	$125.00	$4,816.50	$28,899.00
Pneumothorax Simulator	6	$802.75	$528.70	$3,172.20
Pneumothorax Kit	10	$52.87	$178.00	$1,068.00
Pneumothorax Replacement Lungs	10	$17.80	$2,760.00	$16,560.00
IV Arm Kits with accessories	8/10	$276.00	$279.00	$1,674.00
Introsseous Model for IV's on Infants	5	$55.80	$1,245.90	$7,475.40
Intradermal Injection Simulator	10	$124.59	$1,800.25	$10,801.50
Intramuscular Injection Simulator	5	$360.05	$1,406.20	$8,437.20
Injection Teaching Model	20	$70.31	$1,406.20	$8,437.20
EPI Pen Auto Injector	10	$367.80	$3,678.00	$22,068.00
Purita D Oxygen	5	$69.95	$349.75	$2,098.50
Oxygen Tank Wrench	5	$2.95	$17.75	$106.50
Regulator, O2	5	$324.95	$1,624.75	$9,748.50
Flowmeters, Webster	5	$22.99	$114.95	$689.70
Cordura D Bag	0/5	$59.95	$299.75	$1,798.50
Laerdal Pocket Mask with one way valve and filter	11	$12.75	$140.25	$841.50

Extrication Collars	0	$84.95		
Extrication Collars assorted sizes	23			
Stiffneck Select C-collars	0	$16.96		
Airsplint, Full Arm	16	$7.75	$124.00	$744.00
Hare Traction Splints	0/5	$179.95	$899.75	$5,398.50
Board kit with case	4/8	$40.00	$320.00	$1,920.00
KED Board	5	$129.00	$645.00	$3,870.00
BAX Strap Backboard	6	$129.95	$649.75	$3,898.50
HeadBed 11 AD/CH	5	$7.75	$38.75	$232.50
Laryngeoscopes Handles Adult	5	$24.00	$120.00	$720.00
NEEDE 2-15 MAC #3	5	$24.95	$124.75	$748.50
NEEDE 2-15 MAC #4	5	$24.95	$124.75	$748.50
Intubation Forceps Adult	10	$7.25	$72.50	$435.00
Mast Trousers	5	$698.00	$3,940.00	$23,640.00
Restraints, Vest, Lg	2	$15.59	$31.18	$187.08
Restraints, Limb Adult	0/2	$0.60	$1.20	$7.20
One Touch Basic	8	$93.00	$744.00	$4,464.00
One Touch Test Strips	3	$100.00	$300.00	$1,800.00
IV Hook, Mobile 2	5/6	$120.00	$720.00	$4,320.00
Tourniquest Adult 14 X 1"	93	$2.96	$275.28	$1,651.68
Great Utility Blanket	8	$8.15	$65.20	$391.20
Sphygmomanometer	48	$29.23	$1,403.04	$8,418.24
BP Cuff	9	16.45	$148.05	$888.30
Stethoscope, Adult SZ	94	$9.75	$916.50	$5,499.00
Teaching Stethoscopes	5	$11.48	$57.40	$344.40
Scissors 7.25"	33	$4.41	$145.53	$873.18
Aid Bag (M5)	34	$68.86	$2,341.24	$14,047.44
Aid Bag (Future Medical Aid Bag) vest and bag	1	$184.00	$184.00	$1,104.00
V-Vac Starter Kit	10	$91.00	$910.00	$5,460.00
V-vac Training Kit	11/13	$41.46	$538.98	$3,233.88
Needle Container/Sharps 8 gal.	5	$7.15	$35.75	$214.50
Replacement Cartridges	5	$13.00	$65.00	$390.00
Subtotal			**$59,321.91**	**$347,314.96**
Expendable Class VIII Supplies (Training Aids)				
V-vac Adapter tips (4/pk)	12/8	$13.00	$156.00	$936.00
V-vac Catheters (4/pk)	340	$8.00	$2,720.00	$16,320.00

Face Shield or Goggles	0/50		$4.43	$26.58
Glove, Exam, Nonlatex, SM	1	$4.43	$116.40	$698.40
Glove, Exam, Nonlatex, MED	19/20	$5.82	$148.40	$890.40
Glove, Exam, Nonlatex, LG	20	$7.42	$586.00	$3,516.00
Kerlex 4.5" 6 ply	700	$0.81	$1,071.00	$6,426.00
Penlights 6/pkg	180	$5.95	$1,800.00	$10,800.00
Filters for Laerdal Pocket Mask (10/pkg)	225	$8.00	$900.00	$5,400.00
Intra-osseous Catheters	60	$15.00	$12.31	$73.84
Alcohol Foam Handwash	2	$6.15	$12.30	$73.80
Pad, Alcohol Prep 200/bx	50bx	$1.32	$66.00	$396.00
Skin Prep Wipes 50/bx	50	$0.25	$12.00	$72.00
Ammonia Inhalants 10/bx	20	$3.69	$73.80	$442.80
Thermometer Clin Oral, 100/bx	2000	$8.90	$178.00	$1,068.00
Nasopharyngeal Airways 34 Fr.	10	$3.90	$39.00	$234.00
Pharyngeal Airway 80mm	10	$0.75	$7.50	$45.00
Oral Airway	4	$2.95	$59.00	$354.00
Adult Disp BVM	14	$19.95	$279.30	$1,675.80
Oxygen Face Mask Non Rebreather (50/case)	32	$70.50	$70.50	$423.00
Mask, Oxygen, Adult	3	$1.13	$3.39	$20.34
Nebulizer, "T" or Up-Draft, hand held w/res & 7" tubing	20	$1.35	$27.00	$162.00
Cannula, Nasal, Oxygen	40	$0.37	$14.80	$88.80
Oxygen Tubing 7"	17	$.029	$4.93	$29.58
Endotrachial Tubes Cuffed 6.0mm	5	$2.94	$14.70	$88.20
Endotrachial Tubes Cuffed 6.0mm ?/pkg	?	$21.68	$108.40	$650.40
Endotrachial Tube, Cuffed 8mm	14	$2.50	$35.00	$210.00
Endotrachial Tube, Uncuffed 4.5mm	0/5	$2.17	$10.85	$65.10
Endotrachial Tube, Uncuffed 6mm	0/5	$2.94	$17.70	$106.20
KWIK, CIRC MVP	4	$24.95	$99.80	$598.80
NS 0.9% 50ml	252	$0.69	$175.00	$1,050.00
NS 0.9% 500ml	0	$0.47		
NS 0.45% 1000ml	130	$0.45	$60.00	$360.00
NS 0.9% 150ml	5 cs	$41.10	$200.00	$1,200.00
Tape, Transpore 1"	264	$0.79	$208.56	$1,251.36
Tape, Silk .5"	96	$0.27	$25.92	$155.52
Tape, Silk 1"	72	$0.53	$38.16	$228.96
Dressing, Tega-Derm 4"x4"	810	$0.94	$761.40	$4,568.40
Dressing, 4 x 4, sterile (2/pk,25pk/bx)	300	$1.66	$498.00	$2,988.00
Dressing, 2 x 2, sterile (2/pk,25pk/bx)	2000	$0.03	$60.00	$360.00

Dressing, xeroform, petroleum	50	$0.21	$10.50	$63.00
Heparin Lock RV-1000	570	$1.13	$644.10	$3,864.60
Heparin 1000u 500ml (24bg/pg)	240	$2.04	$489.60	$2,937.60
Butterfly IV 21 ga.75"	470			
IV cathers 20 ga. 1"	100	$1.74	$174.00	$1,044.00
IV cathers 20 ga. 1.25"	570	$0.69	$393.30	$2,359.80
catheter & ndl 18 ga. 1.25"	0	$0.86		
angio catheter 16 ga. 1.25"	0	$0.73		
IV Primary Tubing NV 1400	570	$0.59	$336.30	$2,017.80
Syringes 3cc	568	$0.05	$28.40	$170.40
Needles 22 ga x 1"	570	$0.04	$22.80	$136.80
Bandage, 37"x37"x52" (Cravats)	336	$2.16	$725.76	$4,354.56
Dressing First Aid	990	$2.11	$2,088.90	$12,533.40
Pad, Abd 7.5x8"	700	$0.14	$98.00	$588.00
Abdominal Field Dressing 7.5" x 8"	36	$3.94	$141.84	$851.04
Dressing, Field 11 - 3/4"	36	$5.69	$341.40	$2,048.40
Bandaid, Adhesive .75" x 3" 100/bx	300	$2.61	$783.00	$4,698.00
Lancit (12/pkg)	600	$2.33	$116.00	$696.00
Pad, Bed, Chux 24" x 17"	300	$0.08	$24.00	$144.00
Bag, Biohazard, disposable 25/bx	0/240	$70.00	$700.00	$4,200.00
5cc Medication droppers, pediatric	20			
Basin, wash 7qt.	4	$0.51	$2.04	$12.24
Instant cold compress disposable (24/case)	24	$18.00	$18.00	$108.00
Instant Heat (24/case)	24	$19.50	$19.50	$117.00
Subtotal			**$17,832.99**	**$106,997.92**
Multi-Media Training Aids, Durable				
Mosby Videotapes EMT-B (24 video tapes/set)	2 st	$1116.00	$2,232.00	$13,392.00
Brady Patient Assessment Video	3		$100.00	$600.00
Mosby-EZ IV and Medication Admin	3	$26.35	$79.05	$474.30
Laerdal Stiffneck Headbed Video	4	$12.00	$48.00	$288.00
Laerdal V-Vac Video	4	$12.00	$48.00	$288.00
Dyna Med Techniques of Extrication	4	$127.20	$508.80	$3,052.80
Taking Vital Signs	4	$0		
Measuring Pulse, Respirations and Blood Pressure	2	$99.00	$198.00	$1,188.00
Dyna Med Burns	4	$79.95	$319.00	$1,914.00
Jones & Bartlett AED Video	4	$225.00	$900.00	$5,400.00

American Heart Association BLS Video	4	$188.00	$752.00	$4,512.00
MEDCOM/Trainex Prep and Maintain Sterile	4	$39.80	$159.20	$955.21
MEDCOM/Trainex Body Mechanics	2	$105.00	210	$1,260.00
MEDCOM/Trainex Breath Sounds	4	$38.95	$155.80	$934.80
Health Scinces Consortium Trauma Run	4	$165.50	$662.00	$3,972.00
Patient Care Handwash	4			
Infection Control Techniques	2	$99.00	$198.00	$1,188.00
Brady Drug Mikolaj Drug Dosage Calculations	4	$26.50	$106.00	$636.00
ETA Learning Medical Terminology	4	$25.60	$102.40	$614.40
Dynamed Taber's Cyclopedia Medical Dictionary	3	$29.66	$89.97	$539.82
Emergency Care Textbook, 8th Edition	60	$41.40	$2,484.00	$14,904.00
Emergency Care Workbook, 8th Edition	160	$23.10	$3,696.00	$22,176.00
Emergency Care Instructors Resource Manual, 8th Edition (with 3.5" disk for installation of software support)	5	$39.42	$200.00	$1,200.00
Slides 35mm (2200 slides/set) Emergency Care 8th Edition	2	$499.00	$100.00	$600.00
Custom Test Manager for Windows 4 disks & 1 book/st	1	$50.00	$50.00	$300.00
Anatomy Transparencies	2	$170.00	$340.00	$2,040.00
Jones Bartlett Bloodborn Pathogens (CDROM)	4	$39.95	$160.00	$960.00
Brady MEDEMT Site License & Companion Disk	1	$265.50	$265.50	$1,593.00
Brady MEDEMT Companion Disk	6	$69.95	$420.00	$2,520.00
Brady Med Works (Anatomy & Physiology)	4	$69.95	$280.00	$1,680.00
Accesory 115V Light Stand for FLEXCAM	2	$149.00	$300.00	$1,800.00
Flex Cam	2		$2,000.00	$12,000.00
Universal Slide Trays 35mm	50	$9.60	$480.00	$2,880.00
27" TV Color, Quasar, Model #SP2721	1	$489.00	$490.00	$2,940.00
27" TV Color, Quasar, Model #SP2721	1	$489.00	$490.00	$2,940.00

Subtotal			**$18,623.72**	**$111,742.33**
Classroom Support (Computers)				
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Office Support(Computers)				
Fax, Laser Printer Copier, PC Fax Model# MFC4550	1	$800.00	$800.00	$4,800.00
Typewriter, Correctable Man: Brothers, Model # ML500	1	$299.99	$300.00	$1,800.00
Hewlett Packer Laser Jet 4000N Printer Model# C4120A	1	$1,355.00	$1,355.00	$8,130.00
Hewlett Packer Laser Jet 4000N Printer Model# C4120A	1	$1,355.00	$1,355.00	$8,130.00
Hewlett Packer Support Pack for upgrade to 3 year on site next day warranty	2	$190.82	$400.00	$2,400.00
Hewlett Packard Deskjet1600 C Color Printer with DB25M to CEN and 36m 10' Printer Cable Model# C3540A	1	$1,124.00	$1,124.00	$6,744.00
Hewlett Packard Jet Direct for E-net 10bt Card for 1600C Color Printer	1	$265.00	$265.00	$1,590.00
Hewlett Packer Support Pack for upgrade for 1600C Color Printer, 3 year on site next day warranty	1	$32.00	$32.00	$192.00
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Computer Micron	1			
Monitor, Magnavox	1			

Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Monitor, Magnavox	1			
Modems 56K Winmodems, US Robotics Internal	4	$115.00	$460.00	$2,760.00
Outlet Strips (6 outlets each)	24	$6.50	$156.00	$936.00
Printer Cables, 25 pin, male-male (15")	12	$5.94	$70.00	$420.00
Switchbox, parallel, auto (4 way)	3	$79.00	$237.00	$1,422.00
Office Support (Other)				
Dolly, Vendin Machine Truck (Appliance)	2	$280.93	$562.00	$3,372.00
Pagers	0/2			
Dry Eraser Boards	2			
Pen Pointers	2		$16.00	$96.00
Signature Stamps for Instructor/Events	20	$274.00	$40.00	$240.00
Bolt Cutter	1	$15.49	$16.00	$96.00
Paper Cutter	1	$39.99	$40.00	$240.00
Mat Exterior 4' x 3'	4	$29.99	$120.00	$720.00
Mirror Full Length	3	$8.99	$30.00	$180.00
Picture Frames			$500.00	$3,000.00
Army Value Signs ?/st	1st		$300.00	$1,800.00
Hanging File Folders 25/bx	150	$16.25	$100.00	$600.00
Tray Desk Black	24	$2.29	$60.00	$360.00
3 Draw Key Box	1	$175.00	$175.00	$1,050.00
Locks, Series 5200	8	$12.95	$103.00	$618.00
Custom Guidon, 232nd MT2K maroon with white letters	1	$295.00	$300.00	$1,800.00
Custom colored guidons, yellow and black	2	$21.00	$40.00	$240.00
Guidon Staffs, 8' with Arrowhead Flagstaff heads (finials)	3	$189.20	$600.00	$3,600.00
Admiral Flag Stand, gold with adjustment sleeve	3	$30.88	$100.00	$600.00
Scales, Weighing	0/2		$300.00	$1,800.00
AC Power Cord 50' Industrial	8	$19.90	$160.00	$960.00
RCA Cables	4	$3.39	$14.00	$84.00
Subtotal			**$10,130.00**	**$60,780.00**

Expendable Equipment/ Office Supplies				
6 volt batteries	8	$9.95	$79.60	$477.60
Accessory Halogen Bulb Q-5 Littlite Bulb + 12V @380MA Q5	3	$14.00	$42.00	$252.00
Tape, Textile (Engineer Tape)	3			
Sponges	20			
Powder (22 oz.)	21			
Bleach, household	3			
Bags, ziplock, Large 38/bx	228			
Trash bags, Large 40/bx	320			
Envelopes, Vanilla 11 x 14	3bx	$13.99	$41.97	$251.82
Lamination Sheets, 8.5 x 11	5pk	$5.69	$28.45	$170.70
Starter Kit, Typewriter	1	$49.95	$49.95	$299.70
Ribbons, Brother AV 5/16" x 525'	10	$6.95	$69.50	$417.00
Tape, Liftoff F/Daisywheel 281" x 21.4'	2bx	$15.95	$31.90	$191.40
Velcro	3pk	$17.99	$53.97	$323.82
Ear Plugs	15pk	$2.49	$37.35	$224.10
Mounting Brackets, Masonary for Mirrors	3se	$1.49	$4.47	$26.82
Paper, Butcher	3	$9.99	$29.97	$179.82
Bulk Request				
Bulk Request				
Bulk Request				
Subtotal			**$469.13**	**$2,814.78**
TASC Equipment				
Stands w/wheels, TV	4	$0		
LCD Projector - Epson	2	$0		
Slide Projector, 35mm	2	$0		
Remote, Slide Projector, 35mm	2	$0		
Viewing Screen 70" X 70"	2	$0		
Lecternette	2	$0		
Video Cassette Player	2	$0		
Extension Cord, 50'	2	$0		
Power Strip	2	$0		
Adapter, BNC	2	$0		
Cable, RCA to RCA	4	$0		
Total			**$106,377.5**	**$629,649.99**

APPENDIX T

Experimental Sustainment Training Package

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Table of Contents
MT2K Sustainment Package

Training Modules

Future Medic Sustainment Schedule

Week	Topic	Activity
1	BCLS/CPR Review	1) Read training objectives; 2) Review Brady pp. 798-822; 3) Watch video "Quest to reverse sudden death"; 4) Use CPR checklist for 1 and 2 man CPR & practice on the CPR adult manikin; 5) take posttest and check your answers.
2	Overview of Basic Airway Management	1) Read training objectives; 2) Review Brady pp. 100-113; 3) Watch video "Airway management training"; 4) Use Airway checklist practice airway on the adult manikin; 5) take posttest and check your answers.
3	Airway Adjuncts & Suctioning	1) Read training objectives; 2) Review Brady pp. 113-122; 3) Watch video "Using the V-VAC"; 4) Use Airway checklist & practice Airway adjuncts & suctioning on the adult manikin; 5) take posttest and check your answers.
4	Oxygen Therapy	1) Read training objectives; 2) Review Brady pp. 123-136; 3) Use the mouth-to-mask with supplemental oxygen & bag-valve-mask checklist & practice oxygen therapy on the adult manikin; 5) take posttest and check your answers.
5	Patient Assessment and Scene Assessment	1) Read training objectives; 2) Review Brady pp. 137-188; 3) Watch video "Mosby's Patient Assessment"; 4) Use Patient Assessment checklist & practice patient assessment on the adult manikin; 5) take posttest and check your answers.
6	Assessment of the Trauma Patient	1) Read training objectives; 2) Review Brady pp. 190-224; 3) Watch video "Mosby's Patient Assessment"; 4) Use Patient Assessment/Trauma checklist & practice patient assessment on the adult manikin; 5) take posttest and check your answers.
7	Assessment of the Medical Patient	1) Read training objectives; 2) Review Brady pp. 190-224; 3) Watch video "Mosby's Patient Assessment"; 4) Use Patient Assessment/Medical checklist & practice patient assessment on the adult manikin; 5) take posttest and check your answers.
8	Ongoing Assessment	1) Read training objectives; 2) Review Brady pp. 246-250; 3) Watch "Mosby's Patient Assessment"; 4) Use Patient Assessment/Trauma checklist & practice patient assessment on the adult manikin; 5) take posttest and check your answers.

9	Respiratory Emergencies	1) Read training objectives; 2) Review Brady pp. 303-296; 3) Run the computer program "Respiratory Emergencies"; 4) Use Patient assessment & airway checklist & practice patient assessment on the adult manikin; 5) take posttest and check your answers.
10	Poisoning & Overdose Emergencies	1) Read training objectives; 2) Review Brady pp. 382-416; 3) Use Patient Assessment & airway checklist & practice patient assessment on the adult manikin; 5) take posttest and check your answers.
11	Bleeding & Shock	1) Read training objectives; 2) Review Brady pp. 484-504; 3) Run the computer program "Bleeding & Shock"; 4) Use the bleeding & shock checklist & practice bleeding control & dressing application on the adult manikin; 5) take posttest and check your answers.
12	IV Therapy & Fluid Resuscitation	1) Read training objectives; 2) Review handout on IV Therapy; 3) Watch video "IVs"; 4) Use the IV & IV Fluid checklist & practice IV insertion & fluid administration on the adult manikin; 5) take posttest and check your answers.
13	Soft Tissue Injuries	1) Read training objectives; 2) Review Brady pp. 506-543; 3) Use the bleeding & Shock & IV Therapy checklist & practice bleeding control/dressing application & IV Therapy on the adult manikin; 4) take posttest and check your answers.
14	Head & Spinal Cord Injuries	1) Read training objectives; 2) Review Brady pp. 595-629; 3) Watch Video "Head & Spinal Cord Injuries"; 4) Use all checklists to this point & practice all skills related to this type of patient on the adult manikin; 4) take posttest and check your answers.
15	Blasts & Burns	1) Read training objectives; 2) Review Brady pp. 526, 528-37, 840-841; 3) Use all checklists to this point & practice all skills related to this type of patient on the adult manikin; 4) take posttest and check your answers.
16	Chemical/Biological Exposure	1) Read training objectives; 2) Read handout; 3) Use all checklists to this point & practice all skills related to this type of patient on the adult manikin; 4) take posttest and check your answers.
17	Battlefield Transport	1) Read training objectives; 2) Read handout; 3) Use all checklists to this point & practice all skills related to this type of patient on the adult manikin; 4) take posttest and check your answers.

18	Airway Management in Trauma	1) Read training objectives; 2) Read handout; 3) Use airway checklist & practice airway skills related to this type of patient on the adult manikin; 4) take posttest and check your answers.
19	Bites/Stings	1) Read training objectives; 2) Review Brady pp. 381-392, 436-438; 3) Use airway checklist & practice airway skills related to this type of patient on the adult manikin; 4) take posttest and check your answers.

Overview of Basic Airway Management

Purpose of Module:
The purpose of this module is to learn the principles of basic airway management.

Time to complete Overview of Basic Airway Management: 1 hour

Directions for using the Airway Module:

* **You must spend at lease 1/2 hour doing hands-on training.**
1. Read the training Objectives.
2. Review Brady *Emergency Care, Eighth Edition* pp. 100-113.
3. Watch the video tape "Mosby's EMT-Basic VIDEO SERIES, Lesson 2-1 Airway".
4. Watch the video tape "V-VAC® In-service Training".
5. Use the MED EMT computer-based training software and complete Chapter 9, Section 6.
6. Perform the Basic Airway Maneuvers as described in the objectives using the airway checklist and adult mannequin provided.
7. Take the posttest.
8. Give module back to instructor or person in charge.

Training Objectives:

1. Name and label the major structures of the respiratory system on a diagram.
2. List the signs of adequate breathing.
3. List the signs of inadequate breathing.
4. Describe and demonstrate the steps in performing the head-tilt, chin-lift.
5. Relate mechanism of injury to opening the airway.
6. Describe and perform the steps in performing the jaw thrust.
7. State the importance of having a suction unit ready for immediate use when providing emergency care. Demonstrate proper suctioning.

Activities to Perform:

1. Watch the video tape "Mosby's EMT-BASIC VIDEO SERIES, Lesson 2-1 Airway".
2. Use the MED EMT computer-based training software and complete Chapter 9, Section 6.
3. Use the Airway Skill Checklist to verify your steps in opening an airway on the adult mannequin.
4. Demonstrate the techniques of suctioning using the V-VAC®.
5. Take the posttest to give yourself feedback on this module.

Posttest:

1. The first step of emergency care in the patient with inadequate breathing is:
   A. checking for the patient's pulse
   B. manually stabilizing the cervical spine
   C. opening and maintaining the patient's airway
   D. looking for controlling severe bleeding

2. Your 24-year-old female patient has fallen from the roof of her house and is unconscious; the best method of opening her airway is the:
   A. head-tilt, chin-lift maneuver
   B. jaw-thrust maneuver
   C. head-tilt, neck-lift maneuver
   D. tongue-jaw lift maneuver

3. Signs of inadequate artificial ventilation of an adult patient include:
   A. a heart rate that returns to normal
   B. failure of the patient's skin color to improve
   C. the patient's chest rising and falling with each ventilation
   D. a ventilation rate of approximately 12 per minute

4. A common problem associated with mount-to-mouth breating is:
   A. cyanosis
   B. Hemothorax
   C. Pneumothorax
   D. Gastric distention

5. What is the most common cause of airway obstruction in an unconscious patient?
   A. Vomitus
   B. The tongue
   C. Blood clots
   D. Aspirated food

ANSWERS: (1) C (2) B (3) B (4) D (5) B

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Airway Adjuncts and Suction
Skills Sheet

Student's Name:	Date:
Student's SSN:	Start Time:
Station Time:	Finish Time:
Examiners Name:	Overall Status: ☐ Pass ☐ Fail

OROPHARYNGEAL AIRWAY

*Takes or verbalizes body substance isolation precautions	☐ Pass	☐ Fail
Selects appropriate size airway	☐ Pass	☐ Fail
Measures airway	☐ Pass	☐ Fail
*Inserts airway without pushing the tongue posteriorly	☐ Pass	☐ Fail
Removes oropharyngeal Airway	☐ Pass	☐ Fail

NASOPHARYNGEAL AIRWAY

Selects appropriate airway	☐ Pass	☐ Fail
Measures airway	☐ Pass	☐ Fail
Verbalizes lubrication of the nasal airway	☐ Pass	☐ Fail
*Fully inserts the airway with the bevel facing toward the septum	☐ Pass	☐ Fail

SUCTION

Prepares suction device	☐ Pass	☐ Fail
Assures presence of mechanical suction	☐ Pass	☐ Fail
Inserts suction tip	☐ Pass	☐ Fail
*Applies suction to the oropharynx/nasopharynx	☐ Pass	☐ Fail

*** Denotes *Critical Criteria* that must be passed in order to receive an overall pass score for this task. Any critical criteria subtask checked as failed will result in an overall failure of this skill.**

Documenting Comments:

[Intentionally left blank]

Airway Adjunct & Suctioning

Purpose of Module:
The purpose of this module is to review the principles of establishing an open airway, and maintaining that airway using either a oropharyngeal airway or nasopharyngeal airway, and employing the use of a vacuum device to section foreign material from an airway .

Time to complete Airway Adjuncts Module: 1 hour

Directions for using the Airway Adjuncts Module:

* **You must spend at lease 1/2 hour doing hands-on training.**

1. Read the training Objectives.
2. Review Brady *Emergency Care, Eighth Edition* pp. 100-113.
3. Watch the video tape by Laerdal "V-VAC Sunction Unit" and review Mosby's "EMT-Basic Video Series Module 2 *Airway*" tape if necessary.
4. Use the MED EMT computer-based training software and complete Chapter 9, Sections 4 and 5.
5. Use Airway checklist & practice airway on the adult mannequin provided.
6. Take the posttest.
7. Give module back to instructor or person in charge.

Training Objectives:

1. Review the importance of having a suction unit ready for immediate use when providing emergency care.
2. Review techniques of suctioning.
3. Review how to measure and insert both an oropharyngeal airway and a nasopharyngeal airway.
4. The indications, contraindications, and technique for inserting both an oropharyngeal airway and a nasopharyngeal airway.
5. Perform insertion of both an oropharyngeal and nasopharyngeal airway on an adult mannequin.
6. Perform manual suctioning on an adult mannequin using the V-VAC

Activities to Perform:

1. Watch the video tape by Laerdal "V-VAC Suction Unit" and review Mosby "EMT-Basic Video Series Module 2 *Airway*" tape if necessary.
2. Use the MED EMT computer-based training software and complete Chapter 9, Sections 4 and 5.

3. Use the Airway adjuncts skill checklist to verify your steps for inserting both an oropharyngeal and nasopharyngeal airway and performing a manual suction.
4. Perform insertion of both an oropharyngeal and nasopharyngeal airway on an adult mannequin.
5. Perform manual suctioning on an adult mannequin using the V-VAC.
6. Take the posttest to give yourself feedback on this module.

Posttest:

1. Oropharyngeal airways can be used on unconscious patient, except those who:
   A. are in cardiac arrest
   B. have a gag reflex
   C. are under 8 years old
   D. have a contagious respiratory disease

2. The nasopharyngeal airway is popular because it:
   A. comes in more sizes than the oropharyngeal airway
   B. often does not stimulate a gag reflex
   C. can be used even if clear (CSF) fluid is seen in the nose or ears
   D. is made of rigid clear plastic which is less likely to cause bleeding

3. Nasopharyngeal airways must be lubricated to ease insertion; you should use:
   A. petroleum jelly
   B. any petroleum-based lubricant, such as WD-40
   C. any silicome-based lubricant
   D. any water-based lubricant

4. One method of determining which size nasopharyngeal airway to use is by:
   A. comparing it to the diameter of the patient'l little finger
   B. measuring from the patient' nostril to the ear lobe
   C. using the largest airway that will fit in the patient's nostril
   D. All of the above

5. A suction device, whether portable or mounted, must generate a vacuum of:
   A. 100 mm Hg.
   B. 200 mm Hg.
   C. 300 mm Hg.
   D. 400 mm Hg.

ANSWERS: (1) B (2) B (3) D (4) D (5) C

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Oxygen Therapy

Purpose of Module:
The purpose of this module is to learn about the basic components of oxygen delivery systems, their indications, and complications and how they are integrated into the Emergency Medical Serivces.

Time to complete Oxygen Therapy module: 1 hour

Directions for using the Oxygen Therapy Module:

* **You must spend at lease 1/2 hour doing hands-on training.**

1. Read the training Objectives.
2. Review Brady *Emergency Care, Eighth Edition* pp. 123-136.
3. Watch the video tape "Mosby's EMT-BASIC VIDEO SERIES, Lesson 2-1 Airway".
4. Use the MED EMT computer-based training software and complete Chapter 9, Section 7.
5. Initiate Oxygen Therapy on an airway mannequin Use the Airway, Oxygen, and Ventilation Cecklist and adult mannequin provided.
6. Take the posttest.
7. Give module back to instructor or person in charge.

Training Objectives:

1. Define and demonstrate how to employ the components of an oxygen delivery system.
2. Identify a non-rebreather facemask, state the oxygen flow requirements needed for its use and demonstrate the proper use on a patient..
3. Describe the indications for using a nasal cannula versus a non-rebreather facemask and demonstrate the proper use on a patient.
4. Identify a nasal cannula and state the flow rate requirements needed for its use.
5. Explain the rationale for basic life support artificial ventilation and airway protective skills taking priority over most other basic life support skills.
6. Explain the rationale for providing adequate oxygenation through high-inspired oxygen concentrations to patients who, in the past, may have received low concentrations.

Activities to Perform:

1. Watch the video tape "Mosby's EMT-BASIC VIDEO SERIES, Lesson 2-1 Airway".
2. Use the MED EMT computer-based training software and complete Chapter 9, Section 7.
3. Use the Oxygen Administration Checklist to verify your steps for providing oxygen to a patient. Ask a classroom facilitator to provide you with an oxygen tank, regulator, nasal cannula and non-rebreather facemask. Practice using an adult mannequin.
4. Take the posttest to give yourself feedback on this module.

Posttest:

1. A full tank of oxygen contains how many pounds per square inch (psi)?
   A. 1,100
   B. 2,100
   C. 3,100
   D. Varies with different sizes of tanks

2. Although done rarely, oxygen occasionally is humidified to prevent:
   A. head-tilt, chin-lift maneuver
   B. jaw-thrust maneuver
   C. head-tilt, neck-lift maneuver
   D. tongue-jaw lift maneuver

3. A safe residual amount in an oxygen cylinder is:
   A. 500 psi
   B. 2,000 psi
   C. 500 liters per minute
   D. 2,000 liters per minute

4. Oxygen is a medical gas. What color tank is it stored in?
   A. Silver
   B. Red
   C. Green
   D. Blue

5. What is the most common cause of airway obstruction in an unconscious patient?
   A. 2
   B. 4
   C. 6
   D. 8

ANSWERS: (1) B (2) D (3) A (4) C (5) C

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Oxygen Administration
Skills Sheet

Student's Name:		Date:	
Student's SSN:		Start Time:	
Station Time:		Finish Time:	
Examiners Name:		Overall Status:	☐ Pass ☐ Fail

*Takes or verbalizes body substance isolation precautions	☐ Pass	☐ Fail
*Assembles regulator to tank without leaks	☐ Pass	☐ Fail
Opens tank	☐ Pass	☐ Fail
Checks for leaks	☐ Pass	☐ Fail
Checks tank pressure	☐ Pass	☐ Fail
Attaches non-rebreather mask	☐ Pass	☐ Fail
*Prefills reservoir	☐ Pass	☐ Fail
*Adjusts liter flow to 12 liters/minute or greater	☐ Pass	☐ Fail
Applies and adjusts mask to the patient's face	☐ Pass	☐ Fail
NOTE: The examiner must now direct the student to apply a nasal cannula to the patient.		
Attaches nasal cannula to oxygen	☐ Pass	☐ Fail
*Adjusts liter flow up to 6 liters/minute or less	☐ Pass	☐ Fail
Applies nasal cannula to the patient	☐ Pass	☐ Fail
NOTE: The examiner must now direct the student to discountinue oxygen therapy.		
Removes the nasal cannula	☐ Pass	☐ Fail
Shuts off the regulator	☐ Pass	☐ Fail
Relieves the pressure within the regulator	☐ Pass	☐ Fail

*** Denotes *Critical Criteria* that must be passed in order to receive an overall pass score for this task. Any critical criteria subtask checked as failed will result in an overall failure of this skill.**

Documenting Comments:

[Intentionally left blank]

Assessment of the Trauma Patient

Purpose of Module:
The purpose of this module is to review the basic components of the Trauma Patient Assessment.

Time to complete Trauma Patient Assessment: 2 hours

Directions for using the Trauma Patient Module:

* **You must spend at lease 1 hour doing hands-on training.**

1 Read the training Objectives.
2. Review Brady *Emergency Care, Eighth Edition* pp. 190-224.
3. Watch the video tape "Mosby's EMT-BASIC VIDEO SERIES, Lesson 3-1 through 3-6, Patient Assessment".
4. Use the MED EMT computer-based training software and complete Chapter 10, Section 4.
5. Practice Trauma Patient Assessment on the adult mannequin using the Patient Assessment/Management of Trauma checklist.
6. Take the posttest.
7. Give module back to instructor or person in charge.

Training Objectives:

1. Review reasons for reconsideration concerning the mechanism of injury.
2. Review reasons for performing a rapid trauma assessment.
3. Review the areas included in a rapid trauma assessment.
4. Review the components of the detailed physical exam.
5. Review the areas of the body that are evaluated during the detailed physical exam.

Activities to Perform:

1. Watch the video tape "Mosby's EMT-BASIC VIDEO SERIES, Lessons 3-1 through 3-6 Patient Assessment".
2. Use the MED EMT computer-based training software and complete Chapter 10, Section 4.
3. Use the Patient Assessment/Trauma Checklist to verify your steps for performing a performing a Trauma Patient Assessment. Practice using the adult mannequin.
4. Take the posttest to give yourself feedback on this module.

Posttest:

1. The first step of the focused history and physical exam for any trauma patient is to:
   A. determine the chief complaint
   B. obtain baseline vital signs
   C. reconsider the mechanism of injury
   D. take a SAMPLE history

2. An easy way for an EMT-B to remember what to look for in assessing the body of a trauma patient is the mnemonic:
   A. head-tilt, chin-lift maneuver
   B. jaw-thrust maneuver
   C. head-tilt, neck-lift maneuver
   D. tongue-jaw lift maneuver

3. In assessing areas of a patient's body, the two main methods the EMT-B uses are inspection and:
   A. palliation
   B. presentation
   C. palpation
   D. pressure

4. All of the following would be considered "significant" mechanisms of injury except:
   A. death of another occupant in a car
   B. fall from a standing position, less than 6 feet
   C. motor-vehicle collision with rollover
   D. ejection of a passenger from motor vehicle

5. In a rapid assessment of the body, the area that an EMT-B would examine last is (are) the:
   A. head
   B. abdomen
   C. pelvis
   D. extremities

ANSWERS: (1) C (2) C (3) C (4) B (5) D

[Intentionally left blank]

Patient Assessment/Management of Trauma

Skills Sheet

Student's Name:	Date:		
Student's SSN:	Start Time:		
Station Time:	Finish Time:		
Examiners Name:	Overall Status:	☐ Pass	☐ Fail

*Takes or verbalizes body substance isolation precautions	☐ Pass	☐ Fail
Determines the scene is safe	☐ Pass	☐ Fail
Determines the mechanism of injury	☐ Pass	☐ Fail
Determines the number of patients	☐ Pass	☐ Fail
Requests additional help if necessary	☐ Pass	☐ Fail
*Considers stabilization of spine	☐ Pass	☐ Fail
Verbalizes general impression of patient	☐ Pass	☐ Fail
Determines responsiveness	☐ Pass	☐ Fail
Determines chief complaint/apparent life threats	☐ Pass	☐ Fail
*Assesses airway and breating	☐ Pass	☐ Fail
*Initiates appropriate oxygen therapy	☐ Pass	☐ Fail
*Assures adaquate ventilation	☐ Pass	☐ Fail
*Provides injury management	☐ Pass	☐ Fail
*Assesses for and controls major bleeding	☐ Pass	☐ Fail
*Assesses pulse	☐ Pass	☐ Fail
*Assesses skin for color, temperature, and condition	☐ Pass	☐ Fail
*Identifies priority patients/makes transport decisions	☐ Pass	☐ Fail
Obtains or directs assistant to obtain baseline vital signs	☐ Pass	☐ Fail
Obtains SAMPLE history	☐ Pass	☐ Fail
Inspects and palpates the scalp and ears	☐ Pass	☐ Fail
Assesses the eyes	☐ Pass	☐ Fail
Assesses the facial area including oral and nasal area	☐ Pass	☐ Fail
Inspects and palpates the neck	☐ Pass	☐ Fail
Assesses for Jugular Vein Distention	☐ Pass	☐ Fail
Assesses for tracheal deviation	☐ Pass	☐ Fail
Inspects the chest for DCAPP-BLS	☐ Pass	☐ Fail
Palpates the chest for TIC	☐ Pass	☐ Fail
Auscultates the chest	☐ Pass	☐ Fail
Assesses the abdomen for TRD	☐ Pass	☐ Fail
Assesses the pelvis	☐ Pass	☐ Fail
Assess the extremities to include PMS	☐ Pass	☐ Fail
Assesses the posterior	☐ Pass	☐ Fail
Manaages secondary injuries and wounds appropriately	☐ Pass	☐ Fail
Verbalizes reassessment of the vital signs	☐ Pass	☐ Fail

***Denotes *Critical Criteria* that must be passed in order to receive an overall pass score for this task. Any critical criteria subtask checked as failed will result in an overall failure of this skill.**

Documenting Comments: Must perform initial assessment prior to performing detailed physical exam. Patient must be transported within 10 min.

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Bleeding and Shock

Purpose of Module:

The purpose of this module is to review the principles of how to treat injuries that involve bleeding and the prevention of and treatment of shock

Time to complete Bleeding and Shock Module: 1 hour

Directions for using the Bleeding and Shock Module:

*** You must spend at lease 1/2 hour doing hands-on training.**
1. Read the training Objectives.
2. Review Brady *Emergency Care, Eighth Edition* pp. 484-504.
3. Watch the video tape "Mosby's EMT-BASIC VIDEO SERIES, Lesson 5-1 Bleeding and Shock".
4. Use the MED EMT computer-based training software and complete Chapter 14, Section
5. Using skills checklist, apply a dressing, pressure dressing and local and apply pressure to pressure points on the body using an adult mannequin.
6. Tale the posttest.
7. Give module back to instructor or person in charge.

Training Objectives:

1. Review the structure and function of the circulatory system.
2. Review the difference between arterial, venous, and capillary bleeding.
3. Review emergency medical care of external bleeding.
4. Review body substance isolation and bleeding.
5. Review relationship between airway management and the trauma patient.
6. Review signs of internal bleeding and emergency care of the patient with signs and symptoms of internal bleeding.
7. Review steps in the emergency care of the patient in shock.

Activities to Perform:

1. Watch the video tape "Mosby's EMT-BASIC VIDEO SERIES, Lessons 5-1 Bleeding and Shock".
2. Use the MED EMT computer-based training software and complete Chapter 14, Section 3.
3. Use the Bleeding Control/Shock Management Checklist practice those skills on an adult mannequin. Dressings and other materiel are provided for your use.
4. Take the posttest to give yourself feedback on this module.

Posttest:

1. The ability of the body to adequately circulate blood and oxygen to the body's cells is known as:
   A. perfusion
   B. avulsion
   C. hypoperfusion
   D. compensated shock

2. The first step that an TMT-B should take when treating a patient with severe bleeding is to:
   A. apply pressure to the wound.
   B. don protective gloves.
   C. check the patient's blood pressure.
   D. apply a tourniquet.

3. The most difficult type of bleeding to control is:
   A. arterial bleeding.
   B. venous bleeding.
   C. capillary bleeding.
   D. "oozing" bleeding.

4. All of the following are signs of shock except:
   A. altered mental status.
   B. nausea and vomiting.
   C. warn, dry skin.
   D. vital sign changes.

5. The type of shock seen most commonly by EMT-Bs is:
   A. hypovolemic shock.
   B. cardiogenic shock.
   C. neurogenic shock.
   D. irreversible shock.

ANSWERS: (1) C (2) B (3) A (4) C (5) A

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Intravenous (IV) Therapy
Skills Sheet

Student's Name:	Date:		
Student's SSN:	Start Time:		
Station Time:	Finish Time:		
Examiners Name:	Overall Status:	☐ Pass	☐ Fail

*Takes or verbalizes body substance isolation precautions	☐ Pass	☐ Fail
Gathers appropriate equipment	☐ Pass	☐ Fail
*Checks IV bag for:		
a) Expiration date	☐ Pass	☐ Fail
b) Correct solution	☐ Pass	☐ Fail
c) Damage to the bag	☐ Pass	☐ Fail
d) Signs of solution contamination	☐ Pass	☐ Fail
*Use of aseptic technique when connecting IV bag to IV tubing and keeping the line sterile	☐ Pass	☐ Fail
*Flushes the IV line with solution from bag	☐ Pass	☐ Fail
Labels and times bag	☐ Pass	☐ Fail
Correctly identifies patient	☐ Pass	☐ Fail
Locates appropriate site	☐ Pass	☐ Fail
Applies tourniquet	☐ Pass	☐ Fail
*Cleans skin using aseptic technique	☐ Pass	☐ Fail
*Performs venipuncture with aseptic technique	☐ Pass	☐ Fail
*Performs venipuncture with bevel of the needle up	☐ Pass	☐ Fail
*Connects IV tubing to IV catheter	☐ Pass	☐ Fail
*Releases tourniquet	☐ Pass	☐ Fail
Initiates drip rate	☐ Pass	☐ Fail
Secures catheter in position	☐ Pass	☐ Fail
Calculates correct drip rate according to the scenario	☐ Pass	☐ Fail
*Disposes of equipment as appropriate	☐ Pass	☐ Fail
*Documents appropriately	☐ Pass	☐ Fail
*Watches for complications	☐ Pass	☐ Fail

*** Denotes *Critical Criteria* that must be passed in order to receive an overall pass score for this task. Any critical criteria subtask checked as failed will result in an overall failure of this skill.**

Documenting Comments:

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Intravenous (IV) Therapy and Fluid Resuscitation

Purpose of Module:
The purpose of this module is to review the principles of starting and IV, setting up the IV administration set, administering IV fluids, and calculating IV flow rate.

Time to Complete IV Module: 1 hour

Directions for Using the IV Module:

- **You must spend at least ½ hour doing hands-on training.**

1. Read the training objectives.
2. Watch the video tape by Mosby "EZ IV". **Stop the video tape after the discussion regarding complications. You do not need to watch IV piggyback or IV push administration.**
3. Start an IV and administer IV fluids on an IV arm.
4. Take the posttest.
5. Give the module back to the instructor or person in charge.

Training Objectives:

1. Review site selection for vascular access.
2. Review the principles of IV cannulation.
3. Review the principles of calculating IV drip rate.
4. Review the complications of IV therapy.
5. Perform on an IV arm, starting an IV and administering IV fluids.

Activities to Perform:

1. Watch the video tape by Mosby "EZ IV". **Stop the video tape after the discussion regarding complications. You do not need to watch IV piggyback or IV push administration.**
2. Use the Intravenous Therapy Skill Checklist to verify your steps in starting an IV and administering IV fluids.
3. Perform on an IV arm, starting an IV and administering IV fluids.
4. Take the posttest to give yourself feedback on this module.

Posttest:

1. Dilating a vein in preparation for a venipuncture can be accomplished by all of the following interventions except

   A. have patient open and close fist several times
   B. instruct the patient to elevate hand above heart
   C. apply warm compresses for 10 minutes
   D. apply a tourniquet

2. For easy insertion through the skin, the bevel of the needle is placed

   A. upward
   B. downward
   C. toward the side
   D. none of the above

3. A microdrip intravenous set always delivers fluid at what rate?

   A. 15gtt/ml
   B. 30gtt/ml
   C. 60gtt/ml
   D. rates differ among manufacturers

4. Assessment of an existing IV must include which of the following?

   A. review the entire IV system
   B. check container contents
   C. check site for complications
   D. all of the above

5. Which situation shows that no infiltration is present?

   A. blood returns when the bag is lowered
   B. fluids continues to drip
   C. the patient does not complain of pain at the site
   D. the tissue is not red or warm

6. If the IV site is red, swollen, and warm to the tough, what is the problem?

   A. Clotting
   B. Infiltration
   C. Phlebitis
   D. Plugged needle

7. The order for IV fluids reads, "1000 ml of 0.45 sodium chlorite to run for 10 hours." Determine the number of drops per minute the IV should run if the administration set delivers 15gtts/ml.

   A. 20gtt/min
   B. 25gtt/min
   C. 30gtt/min
   D. 50gtt/min

Answers: (1) B (2) A (3) C (4) D (5) A (6) C (7) B

MT2K INDIVIDUAL TRAINING RECORD		
NAME:	UNIT:	MSC:
MODULE	***DATE COMPLETED***	***INSTRUCTOR SIGNATURE***
BCLS/CPR REVIEW		
BASIC AIRWAY		
AIRWAY ADJUNCTS & SUCTIONING		
OXYGEN THERAPY		
INITIAL, SCENE & ONGOING ASSESSMENT		
TRAUMA PATIENT ASSESSMENT		
MEDICAL PATIENT ASSESSMENT		
MUSCULOSKELTAL INJURIES		
RESPIRATORY EMERGENCIES		
POISONING & OVERDOSE		
BLEEDING & SHOCK		
IV THERAPY & FLUID RESUSCIATATION		
SOFT TISSUE INJURY		
HEAD & SPINAL CORD INJURY		
BLAST & BURNS		
BITES & STINGS		
BATTLEFIELD TRANSPORT		
AIRWAY MANAGEMENT IN TRAUMA		
CHEM/BIO EXPOSURE		

Authors' note to users of this form: Print full size on 11 x 8.5 inch paper.

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APPENDIX U

New Combat Medic Questionnaire

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NEW GRADUATE 91B10 MEDIC

Directions:

If you have more than one year experience as a 91B10 or you are a 91B10 medic with an additional skill identifier (ASI) such as physical therapy, optometry, 91C, please notify a research team member or return this questionnaire to your immediate supervisor now.

Circle the number or item best describing your answer. Some answers may be used more than once. Answer **all** the questions. All of your answers will be confidential. **No names** please.

Section One

Proficiency is the knowledge and skill to perform to a standard safely without assistance or supervision.

1. From options 1 through 5 below, select the number best describing your proficiency in performing skills listed below.

Options:
1. Unable to perform
2. Perform with continuous assistance
3. Perform with moderate assistance
4. Perform with minimal assistance
5. Proficient, perform the skill safely without assistance

Skills	Circle one number				
a. Assessing the combat casualty	1	2	3	4	5
b. Managing the airway	1	2	3	4	5
c. Controlling bleeding	1	2	3	4	5
d. Inserting an IV	1	2	3	4	5
e. Caring for casualty in a NBC environment	1	2	3	4	5

Unit Resources are time, personnel, computers, computer software, audio-visual equipment, medical simulators, medical supplies and equipment, actual patients, and simulated patients.

2. From options 1 through 5 below, select the real time frequency in the last 12 months you trained in the
skills listed below.

Options:
1. No training done
2. Weekly training
3. Monthly training
4. Quarterly training
5. Annual training

Skills	**Circle one number**				
a. Life saving skills	1	2	3	4	5
b. Military medic skills (transport casualty, preventive medicine, etc.)	1	2	3	4	5
c. Soldier skills (preventive maintenance, weapons familiarization, field radio, etc.)	1	2	3	4	5

---

3. Select from options 1 through 6 below, the number best describing the last time in your unit you completed intensive training such as EMT-Basic, MPT, BTLS, or an ARTEP.

Options:
1. No training done
2. Less than 1 month ago
3. 1 - 3 months ago
4. 4 - 6 months ago
5. 7 - 12 months ago
6. More than a year ago

Write one number on each blank line below

___ EMT training ___ ARTEP exercise

___ MPT training ___ EFMB training

___ BTLS training ___ Inservice/Continuing Education

___ Other ________________________________ (write-in)

4. Select from options 1 through 5, the number best describing the approximate training time you spent practicing the five types of skills listed below. Your estimate of training time for the 5 skills should equal 100%.

Options:
1. No training done
2. 25% of training time
3. 50% of training time
4. 75% of training time
5. 100% of training time

Write one number on the blank line beside the skill

___ **life saving skills** such as assessing casualty, managing airway, controlling bleeding, inserting IV with IV fluids, and managing a NBC casualty

___ **military medic skills** such as transports casualty, field documentation, preventive medical skills such as inspecting water containers and disposing of medical waste

___ **soldier skills** such as disinfecting water, vehicle preventive maintenance checks, weapon familiarization, operating a field radio, day/night navigation, surviving a NBC environment on the battlefield

___ **patient care skills** such as insert and remove nasogastric tube, insert and remove urinary catheter, assist patient to perform activities of daily living

___ **sick call/clinic skills** such as assist with troop medical clinic care, patient assessment, provide temporary relief of minor symptoms

___ **information management skills** such as E-mail, Internet, word processing

---

5. Select from options 1 through 5, the number best describing the training resources that helped you to practice **life saving skills** such as assessing the casualty, managing airway, controlling airway, controlling bleeding, inserting an intravenous (IV) with IV fluids, and managing a NBC casualty

Options:
1. Not available
2. Not used
3. Not effective
4. Moderately effective
5. Highly effective

Write one number in each blank

___ Mannequins
___ Video Tapes
___ Moulage
___ Real patients
___ Other ______________________________(write-in)

___ Simulators such as an IV arm
___ Computer simulations
___ Field exercises
___ Textbooks

Proficiency is the knowledge and skill to perform to a standard safely without assistance or supervision.

6. From options 1 through 5 below, select your proficiency in performing computer skills listed below.

<u>Options</u>:
1. Unable to perform
2. Perform with continuous assistance
3. Perform with moderate assistance
4. Perform with minimal assistance
5. Proficient in computer skills, no assistance needed

<u>Computer Skills</u>	<u>Circle one number</u>				
a. Use E-mail to send and receive messages	1	2	3	4	5
b. Word processing programs such as Word or Word Perfect	1	2	3	4	5
c. Surf the Internet	1	2	3	4	5
d. Operate hospital automated systems such as CHCS (Composite Health Care System)	1	2	3	4	5

Patient Contact is interacting with patients and performing medic skills on patients.

7. Have you have patient contact in a hospital or clinic as part of on-going medic training? (Circle one number)

   1. Yes...**go to question 8 and continue**
   2. No....**go to question 9 and continue**

---

8. In the last <u>year</u>, how often did you interact with patients? (Circle one number)

   1. 5 days or less
   2. 6 - 14 days
   3. 15 - 30 days
   4. 31 - 90 days
   5. More than 90 days

9. How many training days are needed each year to keep you proficient in 91B10 medic skills in your position and assignment? (Circle one number)

1. 5 days or less
2. 6 -14 days
3. 15 - 30 days
4. 31 - 90 days
5. More than 90 days

---

10. The AMEDD Center and School prepared new medics to perform in a combat environment? (Circle one number below.)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

11. The AMEDD Center and School prepared new medics to perform in humanitarian missions and health

operations other than war? (Circle one number below.)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

12. The AMEDD Center and School prepared new medics to perform in combat support hospitals? (Circle one number below.)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

13. The AMEDD Center and School prepared new medics to perform in emergency departments or ambulance transport? (Circle one number below.)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

14. The AMEDD Center and School prepared new medics to perform in inpatient wards? (Circle one number below.)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

---

15. The AMEDD Center and School prepared new medics to perform in sick call clinics? (Circle one number below.)

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

NEW MEDIC
is the 91B10 graduate from the 91B10 course with less than 1 year experience.

Proficiency is the knowledge and skill to perform to a standard safely without assistance or supervision.

16. From the options below, select the number describing your priority of 91B10 new medic skills that should be taught to **proficiency** at the 91B10 course.

Options:

1. Not a priority to be taught to proficiency
2. Low priority to be taught to proficiency
3. Moderate priority to be taught to proficiency
4. High priority to be taught to proficiency

Write one number on the blank line beside the skill

___ **life saving skills** such as assessing casualty, managing airway, controlling bleeding, inserting IV with IV fluids, and managing a NBC casualty

___ **military medic skills** such as transports casualty, field documentation, preventive medical skills such as inspecting water containers and disposing of medical waste

___ **soldier skills** such as disinfecting water, vehicle preventive maintenance checks, weapon familiarization, operating a field radio, day/night navigation, surviving a NBC environment on the battlefield

___ **patient care skills** such as insert and remove nasogastric tube, insert and remove urinary catheter, assist patient to perform activities of daily living

___ **sick call/clinic skills** such as assist with troop medical clinic care, patient assessment, provide temporary relief of minor symptoms, patient assessment

___ **information management skills** such as E-mail, Internet, word processing

NEW MEDIC
is the 91B10 graduate from the 91B10 course with less than 1 year experience.

17. Select from the options best describing soldier skills and duties to be prioritized **at the 91B10 course** to assist the new medic's initial fit into the military culture and mission of your unit.

Options:
1. Not a priority
2. Low priority
3. Moderate priority
4. High priority

Write one number on the blank line beside the skill

___ Military courtesy
___ Drill & Ceremony
___ APFT (physical fitness)
___ CQ
___ Day/night navigation
___ Code of War & military conduct
___ Weapons familiarization
___ Operating field radio
___ Surviving on a NBC battlefield
___ Other ________________________________ (write-in)

Valued Team Member is a member who is respected and included by others to train and perform the mission.

18. Circle the option below best describing the new medic's level of acceptance as a valued team member by the non-medic members in your unit. (Circle one number)

1. Not accepted
2. Low acceptance
3. Moderate acceptance
4. High acceptance

Valued Team Member is a member who is respected and included by others to train and perform the mission.

19. Select the option below, best describing factors contributing to your acceptance by non-medic soldiers in your unit.

Options:
1. Not a priority
2. Low priority
3. Moderate priority
4. High priority

Write one number on the blank space

___ Appears skilled

___ Understands and behaves according to informal rules of unit

___ Demonstrates interest in filling mission requirements other than medic mission

___ Demonstrates ability to adapt

___ Demonstrates ability to be open-minded

___ Appears to be a self-learner

___ Other ____(write-in)

SKILLS

If you work in a hospital go to question 20 and continue

If you work in a TO&E unit go to question 21 and continue

20. Where do 91B10 medics work in your unit? (Check all that apply.)

___ Clinic

___ Sick Call Clinic

___ Emergency Department

___ Ambulance Section

___ Operating Room

___ Critical Care Unit

___ Wards

___ Other ___________________________________ (write-in)

21. What skills are practiced by at least 50% of the 91B10 medics in your hospital or clinic? Check all that apply.

___ Vital Signs
___ Lift/Transfer patients
___ Take patient history
___ Perform physical examination
___ Perform triage

___ Create a sterile field
___ Put on sterile gloves
___ Assist with activities of daily living
___ Assist with procedures
___ Perform communication skills

___ Perform manual airway skills (i.e. chin-lift, head-tilt, etc.)
___ Perform CPR
___ Perform endotracheal intubation
___ Administer oxygen

___ Splint patient's extremity
___ Apply bandages/dressings
___ Apply hot/cold packs
___ Document patient care activities

___ Start an IV
___ Monitor patient on IV fluids
___ Insert/remove urinary catheters
___ Insert/remove nasogastric tubes
___ Other ____ (write in)

22. Should the new medic be certified at the basic emergency medical technician-basic level (EMT-B) upon graduation from the 91B10 course? (Circle one number)

1. Yes…**go to question 23 & continue**
2. No….**go to question 24 and continue**

---

23. Circle below reasons EMT-Basic certification is needed for the new medic upon graduation from the 91B10 course. (Circle all that apply then **go to question 25 and continue**)

1. EMT-Basic certification is a recognized measure of proficiency in medic skills.
2. EMT-Basic certification may allow access to civilian medical facilities in our area that are not currently open.
3. EMT-Basic certification supports the medic's ability to transfer emergency medic skills to the military setting.
4. EMT-Basic certification is important for operations other than war for humanitarian and disaster assistance.
5. Units do not have the resources of time, personnel, or money to train-up 91B10 graduates to certify.
6. Other ____(write in)

24. Circle below reasons EMT-Basic certification is not needed for the new medic upon graduation from the 91B10 course. (Circle all that apply)

1. EMT-Basic certification and medic's mission are not related.
2. EMT-Basic certification will not open access to patients in civilian medical facilities in our area.
3. EMT-Basic certification interferes with the medic's ability to transfer emergency medic skills to the military setting.
4. New medics receive all the training needed at the 91B10 course to perform the combat mission without EMT-Basic certification.
5. Leadership does not show interest in keeping certification current.
6. EMT-Basic certification is not tied to promotion or career progression.
7. Other ____(write in)

Section Two

DEMOGRAPHICS

Demographics will help researchers interpret results from your **installation** and <u>will not</u> be analyzed to report differences about individuals. Researchers will report information about age, gender, ethnicity, and educational background as group data to describe whether those participating in the study represent a cross-section of enlisted and officer views at each installation. Please answer **all** of the items. Your answers are important and confidential.

25. What is your gender? (Circle one number)

1. Male
2. Female

---

26. What is your age? ______ (write on the line)

---

27. What is your ethnic identification? (Circle one number)

1. African-American
2. Asian-American
3. Caucasian-American
4. Hispanic-American
5. American Indian
6. Other ____________________________(write-in)

28. What is the **highest** educational level that you have completed? (Circle one number)

1. Less than high school
2. High school diploma or GED
3. Some college, no degree
4. Some college, license, or certificate
5. College, associate's degree (i.e. AA, AS)
6. College, Bachelor's degree (i.e. BA, BS, BSN)
7. Graduate degree, advanced (i.e. MBA, MA, MS, MSN, MPH)
8. Graduate degree, professional (i.e. Ph.D., MD, DO)

---

29. Circle the number indicating your current grade?

1. E - 1
2. E - 2
3. E - 3
4. E - 4
5. E - 5
6. E - 6

---

30. What type of unit are you assigned? (Circle one number)

1. TO&E unit..........**go to question 31 and continue**
2. Hospital or clinic...**go to question 33 and continue**

---

31. If TO&E unit, what type of TO&E unit? (Circle one number)

1. Combat/Combat Support BN
2. Medical Company: Forward Support BN, Main Support BN, Area Support Medical BN, Evacuation Air/Ground
3. TO&E Hospital (CSH, MASH, TO&E General Hospital
4. Other ______________________________ (write-in)

---

32. If TO&E unit, what is your position (Circle one number, then **go to question 36)**

1. Combat Medic (TO&E Combat Medic Section)
2. Ambulance Aide/Driver (TO&E)
3. Medical Specialist
4. Flight Medic (TO&E Air Evacuation)
5. Litter Bearer (CSH, MASH, TO&E General Hospital)
6. Other ______________________________(write-in)

33. If hospital or clinic, what type of facility? (Circle one number)

1. Medical center (MEDCEN)
2. Medical Activity (MEDDAC)
3. Health Clinic or Troop Medical Clinic
4. Other ______________________________ (write-in)

---

34. If hospital or clinic, what type of unit? (Circle one number)

1. Emergency Department
2. Ambulance Section
3. Patient In-processing/Triage
4. Sick Call Clinic
5. Inpatient Unit
6. Other ______________________________(write-in)

---

35. If hospital or clinic, what is your position? (Circle one number)

1. Medical Specialist
2. Ambulance Aide/Driver
3. Other ______________________________ (write-in

---

36. Which is the rank of your **immediate** supervisor? (Circle one number)

1. E1 - E4	**5.** E - 8	**9.** 03
2. E - 5	**6.** E - 9	**10.** 04
3. E - 6	**7.** 01	**11.** 05
4. E - 7	**8.** 02	**12.** 06

---

37. Circle the category of your immediate supervisor. (Circle one number)

1. Enlisted.................**go to question 38 & continue**
2. Commission Officer...**go to question 39 & continue**

---

38. What is the MOS of your enlisted supervisor? (Circle one number and **go to question 40 & continue**)

1. 91B20 NCO
2. 91B30 NCO
3. 91C
4. Platoon Sergeant other than Army Medical Department
5. Other ______________________________ (write-in)

39. Who is the first commissioned officer in your chain of command? (Circle one number)

1. Medical Service (i.e. MSC)
2. Medical Specialist (i.e. MS, PA)
3. Registered Nurse (AN)
4. Medical (MC)
5. Other ______________________________ (write-in)

---

40. During your entire military career, how long have you worked in TO&E units? (Circle one number)

Less than a year
1. 1 - 5 years
2. 6 - 9 years
3. 10 or more years

---

41. During your career as a medic, how long have you worked in TO&E units? (Circle one number)

1. Less than a year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

42. During your career, how long have you worked in a hospital or clinic? (Circle one number)

1. Less than a year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

43. During your career, how long have you worked in an emergency department (ED)? (Circle one number)

1. Less than a year
2. 1 - 5 years
3. 6 - 9 years
4. 10 or more years

---

44. How many years of civilian medical experience have you had? [Fill in the blank(s)]

___ years (EMT)   ___ years (other medical)

45. Are you currently EMT-B certified? (Circle one number)

1. Yes...**go to question 46 & continue**
2. No....**go to question 47 & continue**

---

46. Where were you certified? (Circle one number)

1. 232nd MED BN, Ft. Sam Houston, TX
2. Current unit
3. Other ____________________________ (write-in)

Social security number will be used in the research team's database to tract phase III responses and to correlate certain items with skill test scores. Social security numbers **will not** be used to track nor report individual responses.

47. Enter your social security number. ___ ___ ___ – ___ ___ - ___ ___ ___ ___

Computer Systems. Please identify the types of computer systems available to 91B10 medics in your unit. This information will be used to understand the possibility of delivering distance learning training to the medic.

48. Please describe the types of computer systems available for you to use in your unit. Circle **Yes, No, or UK (don't know)** and fill in the **blanks** below.

Circle one letter for each category

	How many	LAN/Modem	Internet	CD-ROM
a. 386	___	Yes No UK	Yes No UK	Yes No UK
b. 486	___	Yes No UK	Yes No UK	Yes No UK
c. Pentium	___	Yes No UK	Yes No UK	Yes No UK

Written Comments or Concerns (optional)

Thank you for your time and participation!

APPENDIX V

Medical Field Readiness Index (MFRI)

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COMBAT MEDIC (91B10)

MEDICAL FIELD READINESS INDEX (CM-MFRI)

Directions

1. Conduct hands-on test of the four life-saving skills (trauma assessment, airway management, IV therapy, and bleeding control/shock management).

    - Evaluate by leaders who currently meet Medical Readiness Standards.
    - Use the MT2K "four life-saving skills forms".

2. Complete the MT2K "Combat Medic (91B10) - Medical Field Readiness Index" (MFRI).

    - Choose from each skill sheet, the number in bottom right hand corner (points awarded column).
    - Divide the number in the points awarded column for each skill by the total number possible and enter number in column 2.
    - Move the decimal two places to the right to express as a percentage score. Enter the number in column 3.
    - Use the conversion chart to determine the Soldiers' Medical Readiness Index Score in each life-saving skill. Enter the number in column 4.
    - Add all four Medical Readiness Scores and divide by four (4). Do not round averages. Enter this number on the line.
    - Circle the number in the Medical Readiness Score For Overall Performance that corresponds to the number written on the line.

3. Report the results of the CM-MFRI to your chain of command.

4. File the MT2K "Life-Saving Skill Form" and CM-MFRI in the soldiers training records.
    - Check for completeness and correctness.
    - At all times, evaluators will ensure all documents are protected with a FOU coversheet.

5. Use all of the completed CM-MFRI on individual soldiers to complete the U-MFRI.
    - Squads/Platoons/Sections/Units can use the U-MFRI to establish readiness.

COMBAT MEDIC (91B10)
MEDICAL FIELD READINESS INDEX (CM-MFRI)

Soldier's Name:	Soldier's SSN:
Evaluator's Name:	Date Tested:

Column 1 Life-Saving Skill	Column 2 Calculate Percentage: Points Awarded (PA) Points Possible (PP) Move decimal two places to the right to express percentage score	Column 3 Enter Percentage Score	Column 4 Convert the percentage to a 0,1,2,3 based on the conversion table below: 0 = 1% to 59% 1 = 60% to 69% 2 = 70% to 89% 3 = 90% to 100%
Trauma Assessment	Enter PA 39		
Airway Management	Enter PA 34		
IV Therapy	Enter PA 22		
Bleeding Control/Shock Management	Enter PA 10		

Add all the Soldier's Medical Readiness Index Scores in column 4 and divide by four (4) (do not round averages).

Enter the number in this space _______. Circle the number below that corresponds to the number on the line.

Medical Readiness Score For Overall Performance

0 = Fails to meet Medical Readiness Standards.

1 = Meets Medical Readiness Standards with retraining and reevaluation within 30 days from original test date.

2 = Meets Medical Readiness Standards.

3 = Exceeds Medical Readiness Standards.

UNIT

MEDICAL FIELD READINESS INDEX (U-MFRI)

Directions

1. Examine each of the combat medic (91B10) CM-MFRI in your squad/platoon/section/unit and record in column 2 the number of combat medics (91B10) that passed with a 70% or higher with each life-saving skill.

    - Evaluate by leaders who currently meet Medical Readiness Standards.
    - Each life-saving skill is added separately. Soldiers do not have to score 70% or above in all skills to be counted within each skill.
    - Scores are current for 6 months from testing when adding unit totals.

2. Complete the MT2K "Unit- Medical Field Readiness Index" (U-MFRI).

    - Divide the number of soldiers that achieved a 70% of higher within each skill by the total of 91B10 soldiers in the unit and enter number in column 2.
    - Move the decimal two places to the right to express as a percentage score. Enter the number in column 3.
    - Select the percentage from column 3 and using the conversion table enter the Readiness Factor in column 4.
    - Add all four Readiness Factor numbers in column 5 and divide by four (4). Do not round averages and enter this number written on the line.
    - Circle the number in the Unit Medical Readiness Score For Overall Performance that corresponds to the number written on the line.

3. File the U-MFRI in the Unit training records.
    - Check for completeness and correctness.
    - At all times, evaluators will ensure all documents are protected with a FOU cover sheet.

4. The U-MFRI can be used at squad/platoon/section levels as well as to assess training needs and maintain Medical Readiness.

UNIT
MEDICAL FIELD READINESS INDEX (U-MFRI)

Unit's Name:	Unit's UIC:
Commander:	Date Tested:

Column 1 Life-Saving Skills	Column 2 Number of Medics that attained 70% or higher	Column 3 Calculate Percentage: Number of Medics that attained 70% or higher (NM) Total 91B10 in the unit (TUM)	Column 4 Enter the percentage in column 3 (move decimal two places to the right to express a percentage score)	Column 5 Convert the percentage in column 4 to a 0, 1, 2, or 3 based on the conversion table below: 0 = 1% to 59% 1 = 60% to 69% 2 = 70% to 89% 3 = 90% to 100%
Trauma Assessment		Enter NM Enter TUM		
Airway Management		Enter NM Enter TUM		
IV Therapy		Enter NM Enter TUM		
Bleeding Control/Shock Management		Enter NM Enter TUM		

Add all the Readiness Factor numbers in column 5 and divide by four (4). Do not round averages.

Enter the number in this space _______. Circle the number below that corresponds to the number on the line.

Medical Readiness Score For Overall Performance

0 = Unit fails to meet Medical Readiness Standards.

1 = Unit meets Medical Readiness Standards with retraining and reevaluation within 30 days.

2 = Unit meets Medical Readiness Standards.

3 = Unit exceeds Medical Readiness Standards.

APPENDIX W

Acronyms

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ACRONYMS

91B10 – Medical Specialist Course

AAT – Achievement Anxiety Test

ACL – Adjective Checklist

ACL-Aff – Adjective Checklist Affiliation sub-scale

ACL-Cha – Adjective Checklist Change sub-scale

ACL-End – Adjective Checklist Endurance sub-scale

ACL-s-cfd – Adjective Checklist Self-confidence sub-scale

AED – Automated External Defibrillator

APFT – Army Physical Fitness Training

AIT – Advanced Individual Training

AHS – Academy of Health Sciences

AMA – American Medical Association

AMEDD – Army Medical Department

AMEDD C&S – Army Medical Department Center & School

ANA – American Nurses Association

AR – Army Regulation

ASVAB – Army Services Vocational Aptitude Battery

BAMC – Brooke Army Medical Center

BAS – Battalion Aid Station

BCT – Basic Combat Training

BLS – Basic Life Support

BN - Battalion

BCT – Basic Combat Training

BLS – Basic Life Support

BN - Battalion

BTLS – Basic Trauma Life Support

CAT – California Achievement Test

CDS – Chemical Decontamination Station

CINAHL – Cumulative Index to Nursing and Allied Health Literature

CMAS – Children's Manifest Anxiety Scale

CM-MFRI – Combat Medic MFRI

CPR – Cardiopulmonary Resuscitation

CSEI – Coopersmith Self-esteem Inventory

CSH – Combat Support Hospital

CT – Control Training Group; 232nd Medical Battalion

CTA – Covered Training Area

DA - Department of the Army

DD – Department of Defense

DI – Drill Instructor

DNBI – Diseases of Non-battle Injuries

DoD – Department of Defense

DOT – Department of Transportation

ED – Emergency Department, in a hospital

EFMB – Expert Field Medical Badge

EKG – Electrocardiogram

ELO – Enabling Learning Objective

EM – Experienced Medic group

EMT – Emergency Medical Technician

EMT-A – Emergency Medical Technician, Attendant

EMT-B – Emergency Medical Technician Basic, entry level in this field

EMT-D – Emergency Medical Technician with additional skill in Defibrillation

EMT-I – Emergency Medical Technician, Intermediate level

EMT-P – Emergency Medical Technician, Paramedic level

ET – Experimental Training Group

FDC – Faculty Development Course

FORSCOM – Forces Command

FSMC – Forward Surgical Medical Company

FTX – Field Training Exercise

GPA – Grade Point Average

GPE – Graded Practical Exercise

GT Score – General Technical Score which is part of the ASVAB

IAR – Intellectual Achievement Responsibility questionnaire

IAW – In accordance with

ICU – Intensive Care Unit

I-E – Internal-External scale

ISD – Instructional Systems Development

ITBS – Iowa Test of Basic Skills

IV – Intravenous

JMITC – Joint Military Intelligence Training Center (Defense Intelligence Agency)

LAS – Leisure Activity Scale

MASH – Mobile Army Support Hospital

MEDCEN – Medical Center

MEDCOM – Medical Command

MEDDAC – Medical Department Army Community Center

MEDIVAC – Medical Evacuation (a System to transport patients)

MFRI – Medical Field Readiness Index

MOA – Memorandum of Agreement

MODS – Military Occupation Data System (a computer database)

MOS – Military Occupational Specialty

MPT – Medical Training Proficiency

MRT – Metropolitan Reading Test

MTF – Medical Treatment Facility

MT2K – Medical Training 2000 Study

NATO – North Atlantic Treaty Organization

NBC – Nuclear, Biological, Chemical Warfare

NCO – Non-Commissioned Officer

NCOIC – Non-Commissioned Officer in Charge

NRE – National Registry Examination

NREMT – National Registry Emergency Medical Technicians

OCLI – Oddi Continual Learning Inventory

OIC – Officer in Charge

OOTW – Operations Other Than War

PCS – Permanent Change of Station

P/F – Pass/Fail Skill Sheets

PERSCOM – Personnel Command

RSES – Rosenberg Self-esteem Scale

PHTLS – Pre-Hospital Trauma Life Support

POI – Program of Instruction

SAMRS – School Achievement Motivation Rating Scale

SD – Standard Deviation

SEP – Student Evaluation Plan

SERSC – Self-esteem Rating Scale for Children

SGITC – Small Group Instructor Training Course

SICU – Surgical Intensive Care Unit

SINCGARS – Single Channel Ground and Airborne Radio System

SME – Subject Matter Expert

SnAch – Smith Need for Achievement Measure

SOP – Standard Operating Procedure

SSDL – Staged Self-Directed Learning Model (Grow, 1991)

ST Score – Science Technical Score (part of the ASVAB)

TASC – Test Anxiety Scale for Children

TDA – Table of Distribution Allowances

TDY – Temporary Duty

TEDAHS – Training Evaluation Division, Academy of Health Sciences

TLO – Terminal Learning Exercise

TSC – Training Support Center

TOE – Table of Organization and Equipment

TRADOC – Training Command

TTSB – Training Task Selection Board

U-MFRI – Unit MFRI

USR - Unit Status Report

APPENDIX X

Glossary

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GLOSSARY

Achievement - desire to do things well; to accomplish something difficult; to obtain high standards. GT/ST scores, course grades, EMT tests, performance tests, and EMT-B certification score measure achievement.

Battle drills – drills that enhance skills needed on the battlefield and are done to EFMB standards.

Clinical rotation – combat medic student's real time exposure to patient interactions. Clinical rotations were at Brooke Army Medical Center in the emergency room and surgical intensive care unit.

Distance education – universe of teacher-learner relationships that exist when learners and teachers are separated by geographic space and or by time (Moore, 1993).

Distance training – teacher-learner relationships driven by the needs of the organization to have effective task-oriented skills acquired by learners in a cost-efficient manner (Devlin, 1993).

Experienced Combat Medic - a soldier that has a minimum of one year's experience as a combat medic.

Life-saving Skills – core psychomotor skills needed to save a life. These skills include Trauma Assessment, Airway Management, IV Therapy, and Bleeding Control/Shock Management.

Medic Readiness - an individual's capability of performing medic skills at all times.

Medic Skills - medical skills that are performed by a combat medic in order to save a life.

Military Specific Medic Skills - medic skills that are unique to a military setting and performed by a combat medic.

Motivation - desire to succeed and avoid failure and is measured by the School Achievement Motivation Rating Scale.

New Medic - a graduate from the combat medic course with less than one year's experience.

Patient contact - interacting with patients and performing combat medic skills on patients.

Proficiency - is the knowledge and skill to perform to a standard safely without assistance or supervision.

Psychomotor Skills – hands-on skills that are movement-oriented where performance relies on knowledge of principles and values.

Self-Directed Learning – learning approach where learners are motivated to assume personal responsibility and collaborative control of the cognitive (self-monitoring), learning process (self-management), in constructing and confirming meaningful and worthwhile learning concepts (Garrison, 1997). Self-directed learning is measured by the Oddi Continual Learning Inventory.

Skill – ability to carry out a specific task effectively (Oermann, 1990).

Skill Decay - the decline or loss of combat medic skill performance.

Skill Laboratory – a place with a controlled environment where a combat medic goes to practice "hands-on" skills such as the four life-saving skills.

Soldier Skills (common skills) - skills that are performed by all soldiers regardless of MOS.

Stand-alone Sustainment Package – a flexible self-directed training package that contains the four core life-saving skills and other EMT-B skills for the combat medic. This learning package is a total of 18 modules to be completed by the soldier once a week for one hour, twice a month for two hours, or once a month for four hours.

Standard – behaviors on a skill performed by a minimally competent combat medic.

Sustainment training - ongoing training to maintain or improve existing combat medic performance on the four core life-saving skills.

Unit Readiness - all personnel in a unit who can perform all duties at all times.

Unit Resources - time, personnel, computers, computer software, audio-visual equipment, medical simulators, medical supplies and equipment, actual patients, and simulated patients that medics encounter to improve their skills.

Unit Train-up - training or retraining by the unit of new medics to improve medic performance.

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Unit Train-up - training or retraining by the unit of new medics to improve medic performance.

APPENDIX Y

Letters of Support/Agreement/Taskings

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MEMORANDUM OF AGREEMENT
BETWEEN
FORT SAM HOUSTON STUDENT PERSONNEL SECTION
AND
CENTER FOR HEALTHCARE EDUCATION AND STUDIES (CHES)

SUBJECT: Assignment of Medic Training 2000 (MT2K) Students

1. The purpose of this agreement is to:

a. Outline the guidelines for assignment and tracking of 91B10 students into the MT2K Study.

b. Describe the role of the PERSCOM AIT Section, the MT2K Study Team and the Ft Sam Houston Student Personnel Section in the processing of MT2K Study participants.

2. PERSCOM AIT agrees to assign soldiers that graduate from the MT2K Study evenly at Ft Bragg, Ft Hood, Ft Carson and Ft Lewis based on requirements at each installation at the time of graduation.

3. CHES agrees to:

a. Include the criteria of students selected for participation in the Student Evaluation Plan (Enclosure 1).

b. Thoroughly brief eligible students based on the above criteria and obtain their signature on a Letter of Waiver of Consent Form (Enclosure 2).

c. Report names and social security numbers of each student assigned to the MT2K Study to Fort Sam Houston Student Personnel Section no later than 1 week from the start of each class.

d. Report names and social security numbers of each student assigned to the MT2K Study to PERSCOM AIT no later than 1 week from the start of each class.

4. The Ft Sam Houston Student Personnel Section agrees to review and forward names and social security numbers of students assigned to PERSCOM AIT as soon as possible.

MEMORANDUM OF AGREEMENT
BETWEEN
FORT SAM HOUSTON STUDENT PERSONNEL SECTION
AND
CENTER FOR HEALTHCARE EDUCATION AND STUDIES (CHES)

SUBJECT: Assignment of Medic Training 2000 (MT2K) Students

5. Effective 28 SEP 98

JOHN E. SUTTON
CPT, MS
Chief of Trainee/Student
Personnel Division

CYNTHIA A. ABBOTT
LTC(P), AN
Principal Investigator

From: "CDRFORSCOM FT MCPHERSON GA//AFOP-OCT/AFMD//"@ams.ca
[SMTP:"CDRFORSCOM FT MCPHERSON GA//AFOP-OCT/AFMD//"@ams.ca] Sent: Friday, July 17, 1998 2:13 PM
Cc: afmd@forscom.army.mil; afop-oc@forscom.army.mil; allmsgs@ams.ca Subject: [R] FOR PERSONNEL SUPPORT//

RTAUZYUW RUEASRB1171 1981700-UUUU--RUEASRB. ZNR UUUUU
R 171930Z JUL 98
FM CDRFORSCOM FT MCPHERSON GA//AFOP-OCT/AFMD//
TO RUEAFDC/CDRICORPS FT LEWIS WA//G3//AFZH-MD/GTO// RUERBFA/CDRIIICORPS FT HOOD TX//AFZF-GT-PO/AFZF-MD// RUERHNA/CDRXVIIIABNCORPS FT BRAGG NC//AFZH-GT-OS/AFZA-MD// INFO RUERBFA/CDR13THCOSCOM FT HOOD TX//AFVG-SPO// RUERFDA/CDR10MTNDIV(L) FT DRUM NY//AFZS-DS// RUEAPFA/101STABNDIV(AASLT) FT CAMPBELL KY//AFZB-SN// RUERBFA/CDR1STCAVDIV FT HOOD TX//AFVA-MD// RUERSWA/CDR3DINFDIVM FT STEWART GA //AFZP-PO/GT/MD// RUERBFA/CDR4THINFDIV FT HOOD TX//AFVB-SURG// RUERHNA/CDR82DABNDIV FT BRAGG NC//AFVC-SU// RUERHNA/CDR44THMEDBDE FT BRAGG NC//AFVA-XA-GA// RUERBFA/CDR1STMEDGP FT HOOD TX//AFVG-MG// RUERHNA/CDR55THMEDGRP FT BRAGG NC//AFVH-B// RUEAWIS/CDR62DMEDGRP FT LEWIS WA//AFZH-INO// RUCBACM/CINCUSACOM NORFOLK VA//J1//
RUEASRB/CDRFORSCOM FT MCPHERSON GA//AFOP-OCT/AFMD// RUERSHA/CDRAMEDDC-S FT SAM HOUSTON TX//MCCS-HRC//

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BT
UNCLAS
MSGID/GENADMIN/FORSCOM AFMD/981171/JUL// SUBJ/REQUEST FOR PERSONNEL SUPPORT// REF/A/DOC/CDRAMEDDCS/10JUL98//
AMPN/SUBJECT: MEDIC TRAINING 2000 STUDY// POC/BROWN/SGM/FORSCOM AFMD/-/TEL:DSN 367-5552//
AKNLDG/YES/INST:PLEASE ACKNOWLEDGE RECEIPT OF MESSAGE BY PHONE// RMKS/1. THE PURPOSE OF THE MEDIC TRAINING 2000 STUDY IS TO EXAMINE TRAINING AND SUSTAINMENT PROCESS OF THE 91B10 COMBAT MEDIC. THIS IS A THREE PHASE MULTI-SITE STUDY TO EVALUATE THE CURRENT STATUS OF THE COMBAT MEDIC, PERFORMANCE COMPETENCIES FROM THREE TRAINING MODELS, AND THE EFFECT AN EXPERIMENTAL SUSTAINMENT TRAINING MODEL HAS ON SKILL DEGRADATION AT TWO POINTS IN TIME. IN ADDITION, THE MILITARY MEDIC FIELD READINESS INDEX (MFRI) WILL BE DEVELOPED AND TESTED TO PRODUCE AN INDICATOR OF UNIT READINESS.
2. THE GOAL OF THE PROJECT IS TO ASSESS AND IMPROVE THE TRAINING AND READINSS OF COMBAT MEDICS. IN FY 98, THE AMEDDC AND S WILL SURVEY DIRECT-LINE SUPERVISORS AND MEASURE THE SKILLS OF 91B10 COMBAT MEDICS. IN FY 99, THEY WILL RETURN AT SIX-MONTH INTERVALS TO REASESS MEDICAL SKILLS. THIS PROJECT ENTAILS NO DIRECT FINANCIAL COST TO

PAGE 03 RUEASRB1171 UNCLAS
UNIT. IT WILL REQUIRE THE SUPPORT OF ALL COMMANDERS TO ENSURE DIRECT-LINE SUPERVISORS AND COMBAT MEDICS ARE AVAILABLE IN HOURLY INCREMENTS TO PARTICIPATE IN SURVEYS, TAKE WRITTEN EXAMS AND PERFORM SKILL TEST. SKILL TESTING WILL TAKE FOUR DAYS AND BE ADMINISTERED BY EVALATORS FROM AMEDDC AND S.
3. THIS STUDY IS COMPRIZED OF THREE PHASES. THREE PHASES INCLUDE: 3A. PHASE I: EVALUATE CURRENT STATUS OF THE COMBAT MEDIC AND COMPARE PERCEPTIONS

WITHIN THE AMEDD, ESTIMATE CONTENT VALIDITY OF THE MILITARY MFRI, AND SURVEY SUPERVISORS, SURVEY, SKILL AND COGNITIVE TEST 91B10 MEDICS AT FT BRAGG, FT CARSON, FT HOOD, AND FT LEWIS.
3B. PHASE II: COMPARES STUDENT PROFICIENCY OF THREE TRAINING MODELS (RANDOMLY SELECT STUDENTS INTO ONE OF THREE GROUPS) FROM THREE COURSE CYCLES IN SEPTEMBER FY98, JANUARY FY99, AND APRIL FY99.
3C. PHASE III: COMPARE SKILL DEGRADATION OUTCOMES BY COMPARING TWO SUSTAINMENT MODELS, EXAMINING SKILL SUSTAINMENT AND SKILL DEGRADATION AT FOUR MONTHS AND SIX MONTHS IN FY 99 AT FT BRAGG, FT CARSON, FT HOOD, AND FT LEWIS.
3D. THE EMPHASIS ON THIS STUDY IS TO MEASURE THE EFFECTIVENESS OF TRAINING BY EXAMININGTHE AQUISITION AND SUSTAINMENT OF MEDIC (TECHNICAL) SKILLS AT GRADUATION AND AT RECEIVING UNIT.

4. FORT HOOD WAS SELECTED AS THE SITE TO EVALUATE A NEW DISTANCE LEARNING SUSTAINMENT PACKAGE FOR COMBAT MEDICS. THE NEW SUSTAINMENT PACKAGE WILL SUPPLEMENT COMBAT MEDICS TRAINING AND REQUIRE ONE HOUR PER WEEK FOR SIX MONTHS TAILORED TO THE UNITS TRAINING SCHEDULE.
5. FOLLOWING UNIT SUPPORT IS REQUESTED:
5A. 91B10 WITH A DEROS OF JULY 1999 OR LATER, SURVEY, TEST, AND EXAM IN FY98 AND TWICE IN FY99.
5B. 50 PERSON CLASSROOM TO ADMINISTER SURVEY AND EXAM. THREE LABORATORY AREAS FOR HANDS-ON TESTING OF FIVE LIFE-SAVING SKILLS. 5C. PLEASE PROVIDE THREE OF THE FOLLOWING TO REDUCE COSTS: TRAUMA MANEQUINS, 02 BOTTLES WITH REGULATORS AND NON SPARKING WRENCHES AND I.V ARMS, AND TRANSPORTATION TO EVALUATION SITE AS NEEDED.
5D. NOTIFY MEDICS RANDOMLY SELECTED OR TESTING AND EXAM.
5E. FT HOOD ONLY: IMPLEMENT SUSTAINMENT PACKAGE 4 HOURS/MONTH TO MEDICS SURVEYED BEFORE CHANGES IN TRAINING (PRE-TRAINING) AND POST- TRAINING.
5F. DATES FOR PRE-TRAINING AND POST-TRAINING TESTS ARE TARGETS AND WILL BE CCORDINATED WITH EACH SITE.
6. REQUEST PHASE I MEDICS (EXPERIENCE MEDICS CLOSE TO ONE YEAR ON POST) SURVEY BE CONDUCTED PRIOR TO 1 OCTOBER 1998.

7. SURVEYS, EXAMS, AND TEST WILL BE CONDUCTED AT THE FOUR AND SIX MONTH FOLLOWING GRADUATION FROM AMEDDS. THE FOLLOWING SCHEDULE WILL BE USED TO CONDUCT THE EVALUATION:
DATE CLASS GRADUATED FOUR MONTH SIX MONTH 28 SEP 98 - 10 DEC 98 APRIL 99 JUNE 99
4 JAN 98 - 16 MAR 98 JUNE 99 AUGUST 99 29 MAR 98 - 7 JUNE 98 OCTOBER 99 DECEMBER 99 8. SAMPLE SIZE:
8A. REQUEST THE SAMPLE SIZE BE PROVIDED TO CONDUCT THE TEST IN OPRDER TO ARRIVE RELIABLE FIGURES TO IMPROVE THE INDIVIDUAL AND UNIT SKILL PERFORMANCE READINESS. FIVE LIFE SAVING SKILLS ARE TESTED, THE SAMPLE SIZES ARE BASED ON TOTAL POPULATION OF 91B10 SOLDIERS ON INSTALLATION.
8B. FOLLOWING IS SAMPLE SIZE FROM EACH INSTALLATION 91B10 MEDICS: 8B(1). FT BRAGG
82D ABN DIV 73
NON-DIV 43
44TH MED BDE 5

8B(2) FT CARSON
4TH ID 43

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3RD ACR	48
10TH CSH	21
NON-DIV	16

8B(3). FT HOOD

4TH ID	95
1ST CAV	111
1ST MED GRP	26
NON DIV	41

8B(4). FT LEWIS

2D ID	46
25TH ID	27
NON-DIV	29

9. THE SKILL TEST IS 1 HOUR/MEDIC, 3 MEDICS/HOUR (3-5 MEDICS/HR AT FT HOOD). ADDITIONALLY THERE ARE FIVE LIFE-SAVING SKILL TESTED: AIRWAY, BLEEDING, SHOCK, IV MANAGEMENT, AND NBC CASUALTY MANAGEMENT. 10. FOR ADDITIONAL INFORMATION CONTACT LTC ABBOTT, DSN 471-9514 OR SFC PORRITT, DSN 471-8973.//
BT

MCCS-HR 8 SEP 98

MEMORANDUM FOR Commander, U.S. Army Medical Command, ATTN: MCOP-O (Mr. Ring) 2050 Worth Rd, Fort Sam Houston, TX 78234-6000

SUBJECT: The Medic Training 2000 Study (MT2K)

1. The AMEDDC&S requests the MEDCOM task The Great Plains Regional Medical Command, the North Atlantic Regional Medical Command and the Western Regional Medical Command to support the Medic Training 2000 Study.

2. FORSCOM support of the Medic Training 2000 Study was accomplished through an official tasking (Enclosure 1). The Corps Surgeon Offices at Ft Bragg, Ft Lewis, Ft Hood, and the Troop Medical Services at Ft Carson are coordinating the visits required by the Research Team to conduct data collection.

3. It is critical that 91B10's in the MEDCENs and MEDDACs at the four installations:

a. Support the Medic Training 2000 Study with the required personnel listed on the MT2K Sample Size Matrix (Enclosure 2).

b. Coordinate directly with the Corps Surgeon's Office at their respective installation to propose dates that allow the Research Team to survey/test all soldiers at each installation during the same visit.

4. I have sent letters to the CONUS Corps Commanders seeking their support and with their approval, we will coordinate with your staff and commanders to minimize the impact of the study on unit operations. I thank you in advance for your cooperation and support. My point of contact for this study is LTC Cynthia Abbott at DSN 471-9514 or commercial (210) 221-9514.

FOR THE COMMANDER

2 Encls
1. FORSCOM Tasking
2. MT2K Sample Size Matrix

RICHARD D. SHIPLEY
Colonel, DC
Dean, Academy of Health Sciences

DEPARTMENT OF THE ARMY
CENTER FOR HEALTHCARE AND EDUCATION STUDIES (CHES)
U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL
FORT SAM HOUSTON, TEXAS 78234-6117

MCCS-HRC (350 A) 28 OCT 98

MEMORANDUM FOR Commander, Center Brigade

SUBJECT: Medic Training 2000 (MT2K) Study

1. Request the use of 1 Soldier Awaiting Training (SAT) each training day from 20 SEP 98 through 6 JUN 99 to support the MT2K Study, Building 2268, Room G-6.

2. The SAT would perform critical duties under the direct supervision of CPT Sims and SFC Porritt. Transportation to and from his unit each day to include the 187th Dining Facility for meals will be provided.

3. Duties include, but aren't limited to:

a. Performing hands on practice of medical skills in a simulated environment for the purpose of fielding evaluation tools in the MT2K Study.

b. Video-recording Graduation Ceremonies, Physcical Fitness Testing, participation in MT2K training during classroom and Situational Training Exercises training and similar critical training events.

c. Assisting with inventory and packing of Class VIII supplies for multiple Temporary Duty trips.

d. Completing sample surveys and cognitive tests intended for use in the MT2K Study.

e. Completing sample computer based training courses intended for use in the MT2K Study.

4. This SAT would be critical to the success of our mission. Additionally, soldiers participating would learn or maintain critical skills taught to 91B10's while performing their duties.

MCCS-HRC (350 A)
SUBJECT: Medic Training 2000 (MT2K) Study

5. The point of contact for this request is CPT Sims or SFC Porritt at DSN 421-8798 or 421-8973 respectively.

CYNTHIA A. ABBOTT
LTC, AN
Principal Investigator

CF:
1. File
2. Center Brigade S-3
3. MT2K Project Manager

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